

UTAH'S PHARMACIST WORKFORCE, 2014

Utah Medical Education Council



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The Utah Medical Education Council

State of Utah

www.utahmec.org

2014

Prepared by:

Jaron Halford, MPP, MPH

Utah's Pharmacist Workforce, 2014

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THE UTAH MEDICAL EDUCATION COUNCIL

The Utah Medical Education Council (UMEC) was created in 1997 out of a need to secure and stabilize the state's supply of healthcare clinicians. This legislation authorized the UMEC to conduct ongoing healthcare workforce analyses and to assess Utah's training capacity and graduate medical education (GME) financing policies. The UMEC is presided over by an eight-member board appointed by the Governor to bridge the gap between public/private healthcare workforce and education interests.

Core Responsibilities – Healthcare Workforce

- Assess – supply and demand
- Advise/develop policy
- Seek and disburse Graduate Medical Education (GME) funds.
- Facilitate training in rural locations.

Products

- Partnerships- public/private
- Reports- healthcare workforce
- Models- workforce and financial
- Program(s) expansion- rural and urban
- Funds Management- Privately funded programs expansion, Medicaid GME and rural training site expansion.

Current Areas of Focus

- Retention of Utah trained healthcare workforce
- Facilitate rural training opportunities
- Strengthen public/private partnerships

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Chris Ireland, Ph.D.

Dean, College of Pharmacy
University of Utah

Larry Fannin, PharmD

Dean, College of Pharmacy
Roseman University of Health Sciences

Evan Vickers, R.Ph

Pharmacist
Utah State Senator

Paul Cady, Ph.D.

Dean, College of Pharmacy
Idaho State University

Eric Cannon, PharmD

Director of Pharmacy Services
SelectHealth
Intermountain Healthcare

Mark Steinagel, MPA

Division Director
Utah Division of Occupational and
Professional Licensing

Russell Hulse, MBA, B.S. Pharm

Pharmacy Director
Urban Central Region
Intermountain Healthcare

Blair Woolf

Pharmacy Director
Smith's Food and Drug

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EXECUTIVE SUMMARY

The national pharmacist workforce has been in a decade-long process of systemic transformation that is impacting both the capacity and market demand for its services. Indeed, pharmacists have undertaken roles in different sectors outside of their traditional retail setting. Consequently, traditional dispensing roles of pharmacists have been expanded in various settings to include assisting in healthcare team productivity and overall improved patient outcomes. Like their national counterparts, Utah pharmacists have experienced these same role changes.

The following report is the third installment in a series of studies that seek to capture various supply and demand characteristics for the pharmacist workforce in Utah. Specifically, the report explores work setting distribution, demographic and geographic dispersal, general retail and non-retail workforce capacity, and various trends that will influence the future supply and demand of pharmacists in Utah.

The last two UMEC reports (2002, 2009) indicated that Utah was experiencing a shortage of pharmacists. The Aggregate Demand Index score for Utah during this time hovered around 4.0 – a number that suggests moderate unmet demand for pharmacists in Utah. The following report, however, indicates that Utah’s workforce is meeting the current overall demands imposed by Utah communities. Moreover, since 2009, Utah’s Aggregate Demand Index number has dropped. By early 2014 Utah’s index score was 2.8 – indicating the supply of pharmacists in Utah is meeting market demand.

By 2014, the workforce has stabilized and has been successfully meeting the new role changes in both retail and non-retail settings. Moving forward, the current supply of pharmacists is estimated to be above the projected demand for pharmacists by 2025. Many factors, however, may change over the coming decade that can influence the current demand and supply trajectory. Regarding demand, the productivity and utilization of pharmacists in certain settings is likely to change in the coming years. For instance, productivity gains/losses as a result of increased utilization of pharmacy technicians, increased automation, improved dispensing technology, increased vaccination roles, increased need to counsel, and an overall expanding scope can all influence the demand for pharmacist services within the state. Accordingly, the current projected surplus of pharmacists by 2025 may be offset by role adjustments that can drastically impact retail and non-retail productivity and overall capacity of the pharmacist workforce in Utah.

RECOMMENDATIONS

The UMEC, in conjunction with the Utah Pharmacist Workforce Advisory Committee, makes the following recommendations to ensure an adequate pharmacist workforce in Utah:

1. The UMEC should continue to support the University of Utah and Roseman University of Health Sciences in identifying future workforce developments that may necessitate adjustments to the inflow of pharmacists provided to Utah by these programs.
 - a. Both programs have a current retention rate above 70%. This high retention rate has helped the Utah pharmacist workforce meet the unmet demand that existed in Utah for the last decade.
 - b. The supply of pharmacists is currently projected to overtake the demand for pharmacists over the next decade. Accordingly, both programs should continue to be aware of graduate placements and respond to a possible surplus if one begins to emerge.
 - i. Changing the composition of classes can help bring down the retention rate by bringing in individuals who are less likely to work in Utah upon graduation.
 - c. The UMEC and these two colleges should also keep close track of pharmacist emigration trends and retention rates.
2. Analyze the pharmacy technician workforce more effectively. While the current UMEC model does not account for the impact of pharmacy technicians, future analyses should incorporate this allied workforce as it contributes to the capacity of the pharmacist workforce.
3. Continue to encourage pharmacists to serve in areas with identified shortages in rural and frontier Utah. The UMEC should continue to develop, expand, and utilize its rural rotation program for pharmacy students.
4. Given the expanding scope of pharmacists, certain measurement systems should be developed to better capture workload specific details of retail and non-retail pharmacists.
 - a. Develop a measurement system to quantify the workload of retail pharmacists in a manner that takes into account productivity gains and expanded scope of work.
 - b. Develop a measurement system to better assess the demand for institutional pharmacist services.
 - c. Quantify the impact of automated refills, automated drug delivery systems, and mail order prescriptions on pharmacist workloads.

UTAH'S PHARMACIST WORKFORCE REPORT, 2014

SECTION 1: INTRODUCTION

One of the Utah Medical Education Council's (UMEC) principal responsibilities is to determine the current number and mix of healthcare professionals in Utah. An integral part of this process involves determining the supply and demand of specific healthcare professionals. The UMEC conducts periodic workforce surveys to 1) help gauge the current active workforce in Utah; 2) assess the future supply and demand for specific healthcare workforces; and 3) develop strategies with stakeholders to ensure that the healthcare workforce requirements of Utah are met.

Utah's Pharmacist Workforce, 2014 is UMEC's third report on Utah's pharmacist workforce.¹ Similar to the previous publications, the report focuses on capturing demographic and practice characteristics of Utah's current pharmacist workforce. In addition, the report explores the capacity of and specific services provided by Utah's current active pharmacists. The report also captures national, regional, and state-specific trends that will impact the future supply and demand for pharmacist services in Utah.

SECTION 2: METHODOLOGY

The data used for this report were collected using a survey instrument crafted by UMEC and the Pharmacist Advisory Committee (see Appendix B for survey). Consisting of 32 questions, the survey questionnaire was mailed out to all 3,044 licensed pharmacists in Utah in the summer of 2013.²

After four mailings, 1,784 surveys were returned – 1,251 surveys from respondents who reported providing services in Utah, and 533 indicating that they do not provide pharmacy related services in Utah. The final response rate for the survey was 60.4%.³ A weight factor of 1.706 has been applied to each case in the analysis.⁴ All analyses have used this weight factor unless otherwise specified.

¹ See "Utah's Pharmacist Workforce, 2002" and "Utah's Pharmacist Workforce, 2009" at www.utahmec.org for information on previous reports.

² Licensed pharmacist data was provided by the Utah Division of Occupational and Professional Licensing (DOPL).

³ 92 licensed Utah pharmacists had "bad" mailing addresses which disallowed them to participate in the survey. Accordingly, including them in the denominator would suggest a non-response rate higher than the actual population who had an opportunity to take the survey. The final response rate then is 1,784 divided out of 2,952 (3,044 – 92 = 2,952) = 60.4%

⁴ The weight factor is calculated by taking the response rate of the entire population (1,784/3,044) - which is .58607. Dividing this number from one gives a weight factor of 1.706 for each case.

SECTION 3: SCOPE AND LIMITATIONS

Data collected via the 2013 UMEC Pharmacist Survey specifically address characteristics of the pharmacist workforce in Utah – ranging from demographics and distribution to practice characteristics and retirement. Analyses show emerging trends in both the supply and projected demand of pharmacists in Utah based on both survey and outside data sources.

In addition, several questions on the survey instrument were answered in an inconsistent manner across each respondent. Some questions were re-written after the first mailing and were answered in a consistent manner thereafter; while some other questions were never consistently answered. Below are survey questions that were inconsistently answered in either the first or all mailings.

- **Question 7:** Not all respondents filled this question out in the first mailing. The question responses were reoriented in the following mailing and a higher response rate followed. Specifically, the selection “I am not interested in a residency” was moved above the other options. This approach was taken to aid respondents in finding this option and selecting it with more ease opposed to having to search for it amongst other options.
- **Question 10:** Responses were inconsistent across RX/Doses dispensed and time spent in each activity. EX: A respondent indicating that they spent 20% in administrative work, 70% in dispensing medications, and 10% teaching. Within the same question the respondent indicates that they dispensed 800 prescriptions per week while doing administrative work, 800 prescriptions while in a distribution role, and 800 while teaching.
- **Question 18:** Respondents in larger organizations self-reported that they were unaware of how many full-time, part-time, and PRN pharmacists were currently employed by their organization.
- **Question 19:** Respondents in larger organizations self-reported that they were unaware of how many full-time, part-time, and PRN positions were currently open within their organization.
- **Question 20:** The first mailing asked the respondents *“In your primary place of employment, do you supervise technicians? If yes, a) how many pharmacy technicians do you supervise, and b) how many pharmacy technicians do you currently feel comfortable supervising.”* Respondents did not know if this question was asking “overall” or “per shift” numbers. The following mailings included *“per shift”* within the question.
- **Compensation:** The survey collected categorical data on the annual gross compensation of pharmacists. This data is limited in providing precise compensation data of active Utah pharmacist.

BACKGROUND TO REPORT

SECTION 4: OVERVIEW

“The beginning of this century marked a period of substantial and persistent demand-driven shortages in the labor market for pharmacists as well as unprecedented growth in the number of colleges and schools of pharmacy.”ⁱ

The drive to reduce healthcare cost in the United States is palpable. One component to mitigating unnecessary healthcare costs has been the increasing utilization of pharmacists. Historically, pharmacists have focused primarily on dispensing prescribed medications. However, pharmacists’ clinical knowledge is now being leveraged to support emerging direct patient care roles. For instance, alongside traditional dispensing roles, most pharmacists can expect to undertake additional patient specific responsibilities such as medication therapy management, patient counseling, and immunizations.ⁱⁱ Accordingly, increasing demand for pharmacists’ services has propelled systemic changes to emerge within the pharmacist workforce.

As more responsibilities become anchored to the pharmacist profession, the ability of the workforce to maintain pace with increased demand can impose unique difficulties. For instance, the decade long shortage (2001-2010) of pharmacists was a product of demand-side influences including prescription drug use, an aging population, introduction of Medicare Part D prescription drug benefit, and overall increasing workloads.^{iii,iv,v,vi} In addition, substantial shortages of pharmacists over the last decade were also a result, in part, of the workforce’s “identity shift” towards undertaking new roles throughout the healthcare system.^{ii,iii,iv,vii} Consequently, continued expansion of direct patient care roles will not only increase the demand for pharmacists’ services in the future, but it will also continue to intertwine pharmacists into the healthcare system as never before.

4.1: NATIONAL PHARMACIST WORKFORCE TRENDS

The national pharmacist workforce was in a severe shortage in the early 2000s as a result of much unmet demand; however, by 2006 national unmet demand was beginning to decrease.^{5viii} By early 2010, roughly half of the states in the United States were reporting market equilibrium between their supply and demand for pharmacists.^{viii} Overall, there has been a gradual decline in unmet demand for pharmacists since June of 2006, and national estimates indicate that current demand for pharmacists is not outpacing supply.^{viii}

⁵ The Pharmacy Manpower Project, an organization focused on monitoring the supply and demand of pharmacists in the United States, scored the United States as a 4.33 in 2000. This score indicates moderate unmet demand nationally. See “The Pharmacist Aggregate Demand Index to Explain Changing Pharmacist Demand Over a Ten-Year Period.” Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3058450/>.

4.1.a: Projected Demand for Pharmacists

Accurately capturing the demand produced as a result of the evolving role of pharmacists is a difficult task. Indeed, national projected demand for pharmacists in 2020 ranges from 256,000^v to 417,000.^{6ii,v,ix} One reason this wide range of demand for pharmacists exists is because of the difficulty in projecting how pharmacists will be utilized within the future healthcare system. Specifically, “if the role of pharmacists changes where pharmacists spend substantially more time providing patient specific care management services, then demand will be higher.”^v The changing gender composition, increasing supply of older workers foregoing retirement, growing percentages of part-time workers, and continuously evolving roles makes accurately estimating future demand for pharmacists an arduous task.^x

4.1.b: Projected Supply of Pharmacists

The national pharmacist workforce was approximately 196,000 in 2000^{xi}, 249,381 in 2009^{xi}, and hovered around 286,400 in 2012^{vi}. Total full-time equivalent (FTE) pharmacists amounted to roughly 101,400 in 2001^x, and are projected to increase to 260,000 by 2020 and 319,000 by 2030^{xii}. Average annual growth of the national pharmacist workforce is estimated to be around 1.4% yearly over the next decade^{iv,v} - increased per capita utilization of medications could add another 2% per year to this annual growth percentage.^v

The supply of pharmacists is projected to grow to 305,000 by 2020 and 368,000 by 2030 – up from 226,000 in 2004.^{xiii} High-end projections suggests the number of needed pharmacists to be closer to 417,000 by 2020.ⁱ Upper-end demand scenarios, which incorporate pharmacists undertaking patient care roles, suggests that the current supply trajectory of pharmacists may result in a shortfall by 2020 and 2030.^{7v,xiv} While the U.S. has responded positively to a shortfall of pharmacists since 2000, the need to ensure a sustainable and capable pharmacist workforce is nonetheless critical.

The national pharmacist workforce is projected to grow 14% from 2012-2022 – with a total employment of 327,800 nationally by 2022.^{vi}

⁶ The high end projection here estimates that 417,000 in the following positions: 100,000 in order fulfillment and 300,000 in patient care functions. Of these 300,000, 165,000 in primary services, 130,000 in secondary and tertiary services, and 22,000 in indirect and other services.

⁷ Specifically, high end projections suggest 417,000 pharmacists are needed by 2020. Current supply estimates place the pharmacists workforce at around 305,000 pharmacists by 2020^{v,xiv}. A shortfall of 38,000 pharmacists by 2030 has also been projected given that only 319,000 pharmacists are supplied with an estimated demand of 357,000.

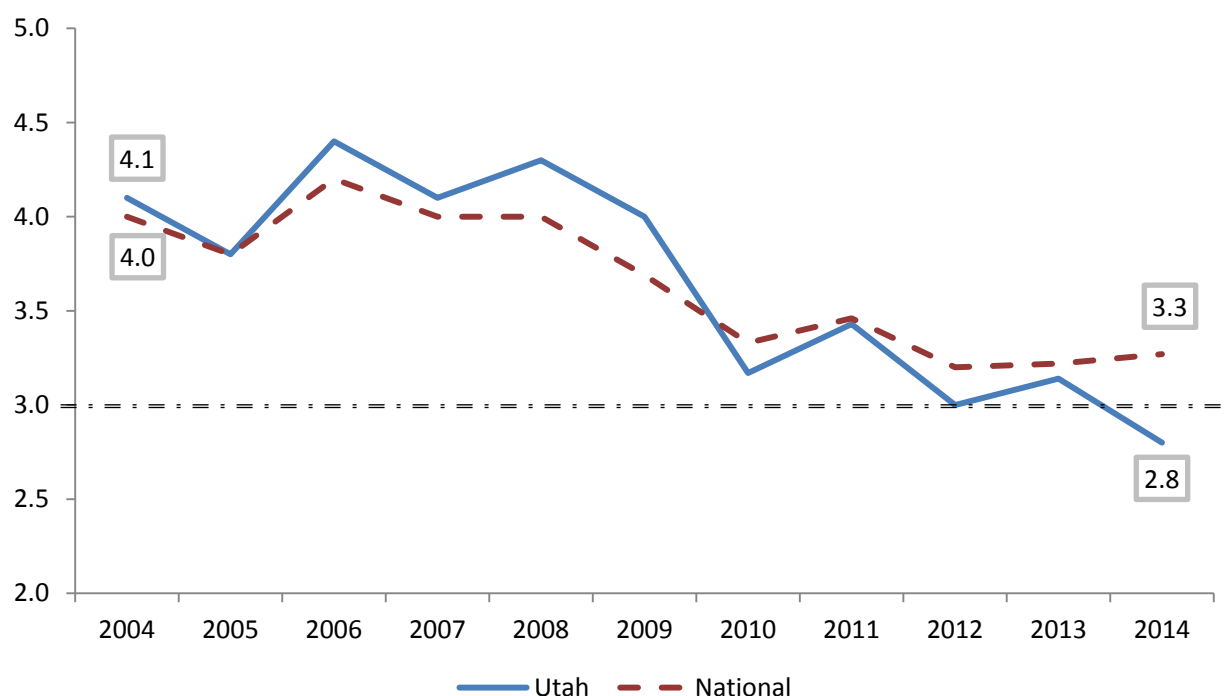
CURRENT UTAH PHARMACIST WORKFORCE

SECTION 5: UTAH PHARMACIST WORKFORCE - OVERVIEW

In 2002, the UMEC published its first pharmacist workforce report which indicated that Utah was experiencing a shortage of pharmacists.^{xv} In 2009, a subsequent report was published with the same conclusion. By early 2014, however, Utah's workforce was estimated to have an Aggregate Demand Index score of **2.8**⁸ – a figure that suggests that demand for pharmacists in Utah is being met by the supply of pharmacists in the state.

The total active pharmacist workforce in Utah is estimated to have increased from 1,353 in 2002 to **2,135** in 2013. In addition, licensed Utah pharmacists have increased 42% since 2004. The average annual growth rate of the total licensed population is 3.95% over the last decade (see Figure 22 below).

FIGURE 1: PHARMACISTS AGGREGATE DEMAND INDEX: UTAH VS. U.S. 2004 - MARCH 2014

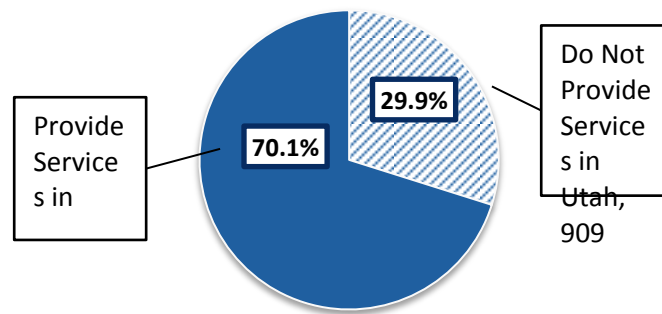


⁸ The Aggregate Demand Index (ADI) used here is based on data reported by the Pharmacy Manpower Project. The data is reported by a panel of pharmacist recruiters and is used to represent geographic and practice sectors who utilize pharmacists. The ADI rankings are as follows: 1= Demand is much less than the pharmacists supply available (i.e. SURPLUS); 2=Demand is less than the pharmacists supply available; 3=Demand in balance with supply; 4=Moderate demand (some difficulty filling open positions); 5=High demand (difficult to fill open positions)(i.e. SHORTAGE).

5.1: CURRENT ACTIVE PHARMACIST SUPPLY IN UTAH

The UMEC's pharmacist survey estimates that approximately **2,135** (70.1%) of the 3,044 licensed Utah pharmacists are currently providing services in Utah. The proportion of the active licensed workforce providing services in Utah is identical to the proportion in 2005.⁹

FIGURE 2: LICENSED PHARMACISTS IN UTAH: DISTRIBUTION BY SERVICE PROVISION

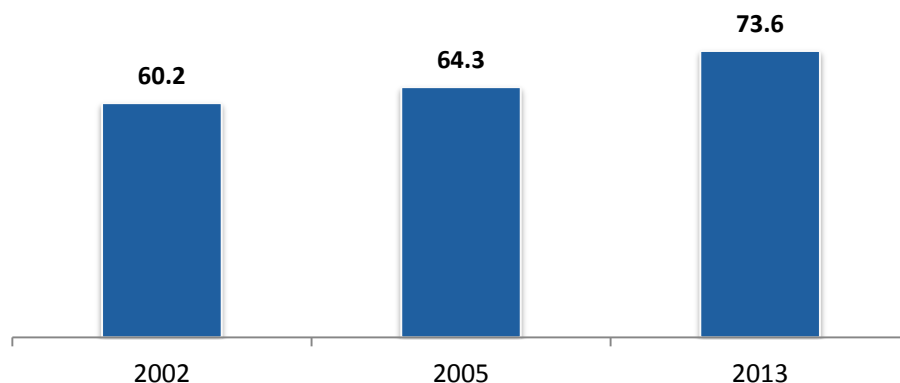


5.2: ACTIVE PHARMACIST-TO-100,000 POPULATION RATIO IN UTAH

The UMEC estimated that Utah's pharmacist-to-100,000 population ratio was roughly 60.2 in 2002. By 2005 this ratio had increased to 64.3. The UMEC estimates that the current ratio is **73.6** pharmacists per 100,000 Utahns.¹⁰ While Utah's ratio continues to increase, it nevertheless routinely lags behind national averages. See *Appendix A* (Table 1) for Western and National comparisons.

Utah's pharmacist-to-100,000 population ratio has increased 22% since 2002.

FIGURE 3: UTAH PHARMACISTS-TO-100,000 POPULATION RATIO (2002-2013)



⁹ The proportion of licensed pharmacists providing services in Utah in 2005 was estimated to be 69.4%. The proportion was slightly lower in 2002 at 64%.

¹⁰ The U.S. Bureau of Labor Statistics estimates Utah's pharmacist-to-100,000 population ratio as 80.7 in 2013. The BLS estimates that 2,340 pharmacists were providing services in Utah during this time.

Of note, the United States Bureau of Labor Statistics (BLS) also provides estimates on the number of active pharmacists in Utah. The BLS's estimates have generally been greater than the ones provided by UMEC. One reason for this discrepancy is due to survey methodology. The UMEC's survey is mailed to each licensed Utah pharmacist, while the BLS sends its "Occupational Employment Statistics (OES) Survey" to businesses who may or may not employ pharmacists. The UMEC is confident that its reports provide a precise snapshot into the pharmacist workforce in Utah primarily because of the type of survey respondent (i.e. a licensed Utah pharmacist opposed to a business that may employ a pharmacist) and overall high response rates. See Appendix A (Figure 1) for Utah pharmacist-to-100,000 ratio comparisons.

5.3: DEMOGRAPHICS

5.3.a: Race and Ethnicity

The demographic composition of Utah's pharmacist workforce is similar to the composition in 2005.¹¹ Specifically, the vast majority of pharmacists still identify themselves as Caucasian (83.5%), followed by the next biggest, albeit much smaller, category of Asian nationalities (5.0%). However, unlike Utah in 2005 and nationally in 2013, the proportion identifying themselves as Caucasian in Utah in 2013 is below the proportion found in Utah's general population (83.5% in the workforce compared to 89.1% in the population).

In addition, Asian nationalities are overrepresented in Utah's pharmacist workforce relative to Utah's general population, while Hispanics are under-represented in the workforce relative to the general population.

Table 1

Race/Ethnicity Comparison: Utah's Pharmacists Workforce vs. Utah's Population

Race/Ethnicity	Utah's Pharmacist Workforce (2013)*	Utah's Population (2013)**	National Pharmacist Workforce (2009)***	National Population (2013)****
<i>Caucasian</i>	83.5%	89.1%	86.5%	77.7%
<i>Asian</i>	5.0%	2.0%	8.1%	5.3%
<i>Hispanic*****</i>	1.0%	12.90%	1.7%	17.1%
<i>African American</i>	.20%	1.1%	2.0%	13.2%
<i>American Indian</i>	.20%	1.1%	.4%	1.2%
<i>Pacific Islander</i>	.20%	.90%	---	.2%
<i>Other</i>	1.0%	---	3.3%	---

*Total does not equal 100% due to non-response.

**Numbers gathered from U.S. Census. See factfinder2.census.gov

***See 2009 National Pharmacist Workforce Survey (Table 2.1.2).^x

**** See United States Census Quickfacts.

Available at: <http://quickfacts.census.gov/qfd/states/00000.html>

*****Hispanic ethnicity asked separately from race in the survey. So an individual could identify as Hispanic alongside a race category.

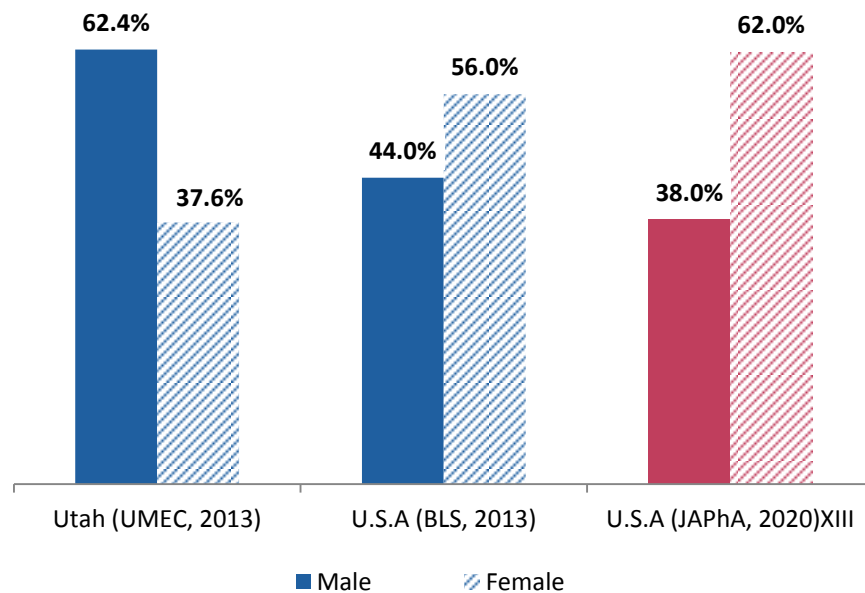
¹¹ In 2005, 91.7% of the pharmacist workforce identified themselves as Caucasian, followed by 4.6% identifying themselves as Asians.

5.3.b: Gender Composition

Currently, **804** females provide services in Utah compared to **1,331** males. The female proportion of Utah's pharmacist workforce has increased over the last decade; however, the growth has been small and the overall percentage of female pharmacists still lags behind national averages. For example, the percentage of female pharmacists in Utah's workforce was 34% in 2002, 35.2% in 2005 and **37.6%** in 2013. However, the national pharmacist workforce was composed of 56% females in 2013 and projected to increase to 62% by 2020.

In 2013, 37.6% of Utah's pharmacist workforce was female. Utah's female pharmacist percentage is below the current and projected national composition.

FIGURE 5: GENDER COMPOSITION IN WORKFORCE AND POPULATION: UTAH VS. U.S.A.^{XIII}



5.3.c: Age

The average pharmacist in Utah is **47.5** years old – up from 45.6 years old in 2005. For females, the average age is 42.6 years old, and for males it is 50.4 years old.¹² In addition, **51.0%** of the workforce is under the age of 46, and **31.0%** of the workforce is over the age of 56.¹³ The proportion of the workforce over the age of 65 has also increased to **12.0%** - an indication that pharmacists are forgoing retirement until later than age 65. Moreover, 17.1% of the male workforce is over the age of 65, while the percentage of females who are over the age of 56 has doubled since 2005 to 15.4%.

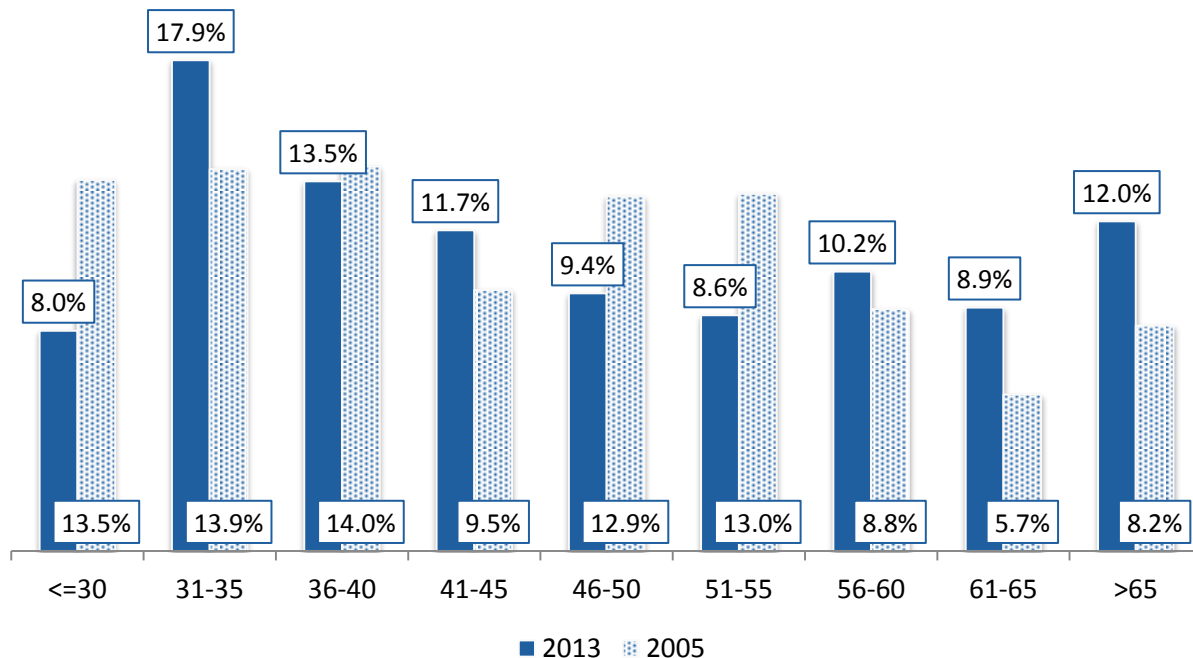
Half of the workforce remains under the age of 46, while pharmacists over the age of 56 has increased to almost one-third (31.0%) of the total workforce.

¹² In 2005, the average female pharmacist was 39.6 years old, and average male was 48.8 years old.

¹³ In 2005, 22.7% of the workforce was over 56 – now 31.0% is over 56 years old. In addition, 63.3% of the female workforce is under the age of 46, and 15.4% of the female workforce is over the age of 56. For males, 43.5% are under the age of 46, and 40.6% are over the age of 56.

As with the 2005 workforce, certain gender trends exist across age cohorts. For instance, the majority of female pharmacists are in younger age categories and the number of female pharmacists decreases as age increases.¹⁴ Male pharmacists still make up the majority of older cohorts and are more evenly distributed across the age cohorts – albeit a dip in the 46-55 year old pharmacists has emerged.

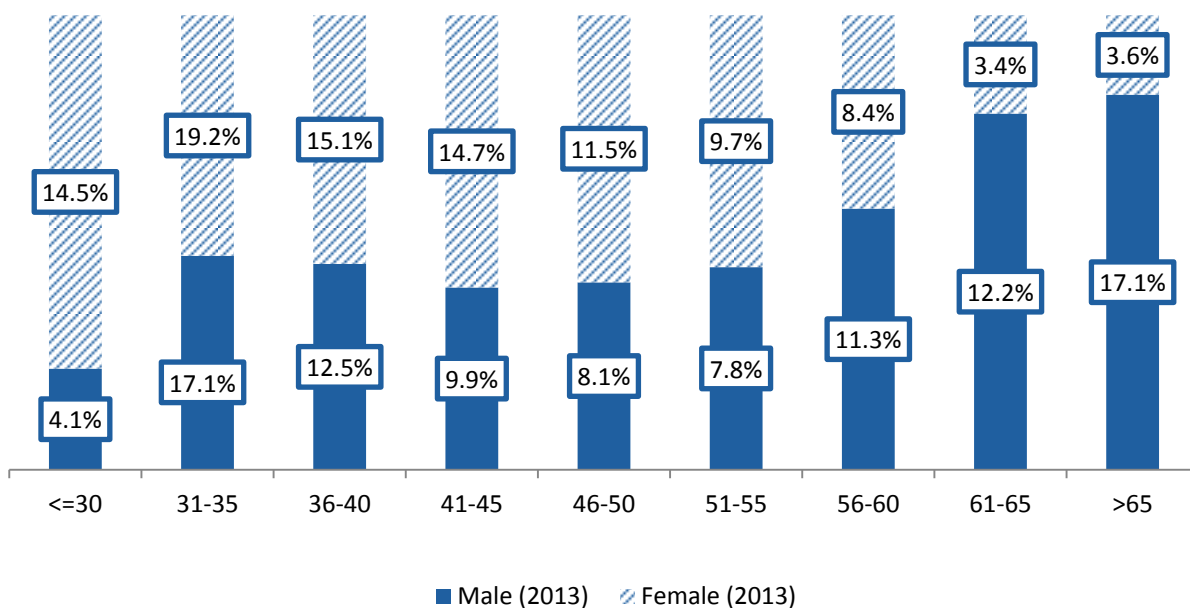
FIGURE 6: AGE DISTRIBUTION OF PHARMACISTS IN UTAH: 2005 VS. 2013



Age Cohort and Gender	2005	2013
45 Years Old and Under	50.9%	51.0%
<i>Male</i>	41.3%	43.6%
<i>Female</i>	68.4%	63.5%
56 Years Old and Over	22.7%	17.7%
<i>Male</i>	31.1%	40.6%
<i>Female</i>	7.2%	15.4%

¹⁴ In 2005 68.4% of females were under the age of 45. In 2013 this proportion was similar at 63.3%.

FIGURE 7: AGE DISTRIBUTION OF PHARMACISTS IN UTAH BY GENDER: 2013



***Each age cohort indicates the proportion of females and males in each category. For example, 17.1% of all males are between the age of 31-35.**

SECTION 6: PRACTICE SETTINGS

The geographic and workplace distribution of active Utah pharmacists has both similarities and differences from the distributions reported in 2005. For instance, pharmacists in Utah are still largely concentrated in a few counties. However, the workplace settings of pharmacists have partially shifted away from being a predominantly retail oriented occupation.

6.1: GEOGRAPHIC DISTRIBUTION

Over three-quarters (**77.7%**) of pharmacists working in Utah are located in four of the twelve designated Local Health Departments (LHDs)¹⁵ areas: Salt Lake, Davis, Utah, and Southwest. In 2005, these four LHDs contained 76.4% of the pharmacist workforce. See Appendix A (Table 2) for a full breakdown by county and comparison with 2005 geographic distribution.

Table 3		
Utah's Pharmacists Workforce by County: 2005 vs. 2013		
Local Health Department	Pharmacist Workforce (%) (2005)	Pharmacist Workforce (%) (2013)
<i>Salt Lake</i>	50.0% (813)	47.1% (875)
<i>Utah</i>	12.4% (202)	12.3% (228)
<i>Davis</i>	9.3% (152)	10.2% (190)
<i>Southwest</i>	NR*	8.1% (151)
<i>Weber-Morgan</i>	8.3% (135)	6.6% (122)
<i>Bear River</i>	4.9% (79)	5.3% (99)
<i>Central</i>	1.8% (29)	3.0% (56)
<i>Tri-County</i>	1.5% (25)	1.9% (36)
<i>Southeastern</i>	1.4% (22)	1.9% (35)
<i>Summit</i>	1.0% (17)	1.3% (24)
<i>Tooele</i>	.5% (9)	1.2% (23)
<i>Wasatch</i>	NR*	1.0% (19)
NR* represents "Non-reportable" information.		

In addition, UMEC data mimics and contributes to the geographic breakdown provided by the BLS. The BLS estimates that 86.1% of Utah pharmacists work in three of the nine economic regions: Salt Lake City, Ogden-Clearfield, and Provo-Orem. The UMEC estimates that **83.2%** of Utah pharmacists currently work in these three economic regions. See Appendix A (Table 3) for a further breakdown of this comparison.

¹⁵ Local Health Departments are composed of the following counties: Bear River (Box Elder, Rich, Cache); Central (Juab, Millard, Sevier, Piute, Sanpete, and Wayne); Davis (Davis); Salt Lake (Salt Lake); Southeastern (Carbon, Emery, Grand, San Juan); Southwest (Garfield, Iron, Kane, Washington, Beaver); Summit (Summit); Tooele (Tooele); Tri-County (Uintah, Daggett, Duchesne); Utah (Utah); Wasatch (Wasatch); Weber-Morgan (Weber, Morgan)

6.2: WORKPLACE SETTINGS AND HOURS WORKED

In 2005, 65.4% of the pharmacists working in Utah were working in retail settings. Over the last decade, however, pharmacists' work settings in Utah have begun to shift towards non-retail settings. For instance, hospital inpatient pharmacists composed 20.0% of the jobs in 2005. Currently, hospital inpatient positions make up **25.5%** of all pharmacist employment in Utah. The majority of Utah's pharmacists still work in retail settings (**52.0%**).¹⁶ However, the change in distribution indicates that the last decade has experienced a high demand for pharmacists in non-retail settings. See Appendix A (Table 4) for a breakdown of work setting by gender.

The percentage of Utah's pharmacist workforce working in retail settings has dropped from 65.4% in 2005 to 52.0% in 2013.

Table 4		
Utah's Pharmacists Workforce by Work Setting: Total and Gender Comparison		
Work Setting	Total Pharmacists (2005)	Total Pharmacists (2013)
<i>Retail – Chain</i>	48.7% (792)	35.9% (730)
<i>Retail – Independent</i>	16.7% (271)	16.1% (326)
<i>Hospital - Inpatient</i>	20.0% (325)	25.5% (518)
<i>Outpatient Clinic</i>	6.4% (105)	6.1% (124)
<i>Hospital – Outpatient</i>	4.9% (79)	5.2% (105)
<i>Long Term Care Center</i>	2.6% (42)	3.1% (63)
<i>College of Pharmacy</i>	1.5% (24)	1.3% (26)
<i>Managed Care Facility</i>	1.6% (25)	1.3% (26)
<i>Mail Order Pharmacy</i>	1.3% (21)	<1.0% (10)
<i>Other</i>	7.6% (124)	5.1% (103)
TOTAL	1,626*	2,135**
* Percentage more than 100% due to counting for multiple settings opposed to primary setting.		
** Percentage displayed represents the workforce percentage found in each setting. The percentages are not taken out of 2,135 due to missing responses and multiple work settings.		

¹⁶ The Department of Workforce Services (DWS) estimates that 52.4% of Utah's pharmacist workforce works in retail settings. The DWS uses the North American Industry Classification System (NAICS) code, 291051, and estimates a percentage of Utah pharmacists in the following retail settings: "Health and Personal Care Stores" (26.61%); "Grocery Stores" (16.13%); and "Other General Merchandise Stores" (9.68%).

6.2.a: Work Arrangements

In 2005, when there was a shortage of pharmacists in Utah, 77% of the workforce was working at least one full-time job – 17.4% of the workforce was actually working an additional part-time job on top of their full-time job. Pharmacists working both a full-time and a part-time job dropped from 17.4% in 2005 to 13.2% in 2013. In addition, while the percentage of the workforce working only one full-time job has remained the same, the number of individual pharmacists working one part-time job has increased from 12.2% of the workforce in 2005 to 20.7% in 2013.

Table 5		
Utah's Pharmacist Workforce by Work Status: 2005 vs. 2013		
Work Status	Total (2005)	Total (2013)
<i>One Full Time Position</i>	59.60%	60.1%
<i>One Part Time, One Full Time</i>	17.40%	13.2%
<i>One Part Time</i>	12.20%	20.7%
<i>Two Part Time</i>	4.00%	3.7%
<i>As Needed/Volunteer</i>	6.40%	1.1%

Over the last decade, taking a single part-time position has been an increasing employment option utilized by both males and females. For instance, males have doubled their proportion of the workforce who works in part-time positions only from 6.6% in 2005 to 12.3% in 2013. By 2013, 84% of males and 56% of females were working at least one full-time position. A major contributor to the increased percentage of male's working strictly part-time is due to older pharmacists forgoing retirement and taking upon part-time work. Women have also increased their proportion of individuals working a single part-time job to over one-third (34.2%) of the female pharmacist workforce in 2013.

84% of males and 56% of females worked at least one full-time position in 2013.

Table 6				
Utah's Pharmacist Workforce by Work Status: Gender and Year Comparison				
Work Status	Male (2005)	Female (2005)	Male (2013)	Female (2013)
<i>One Full Time Position</i>	61.8%	55.9%	68.30%	47.10%
<i>One Part Time, One Full Time</i>	22.9%	7.3%	15.70%	9.20%
<i>One Part Time</i>	6.6%	22.8%	12.30%	34.20%
<i>Two Part Time</i>	2.9%	5.8%	2.40%	5.80%
<i>As Needed/Volunteer</i>	5.2%	8.4%	<1%	2.00%

FIGURE 8: WORK STATUS OF MALE PHARMACISTS BY AGE

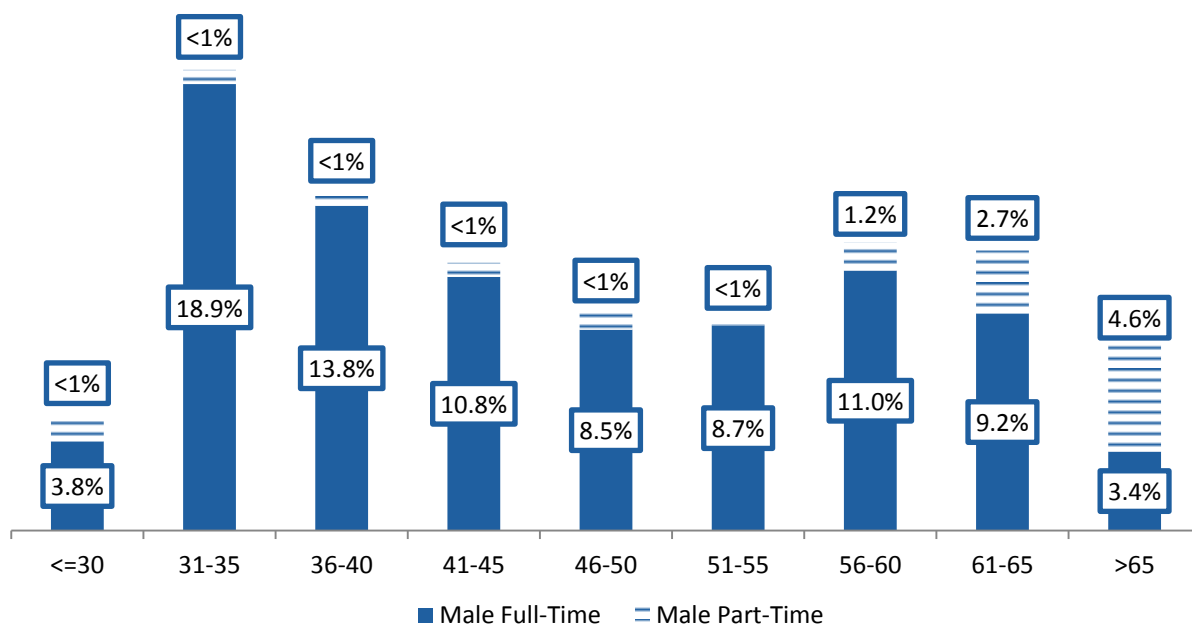
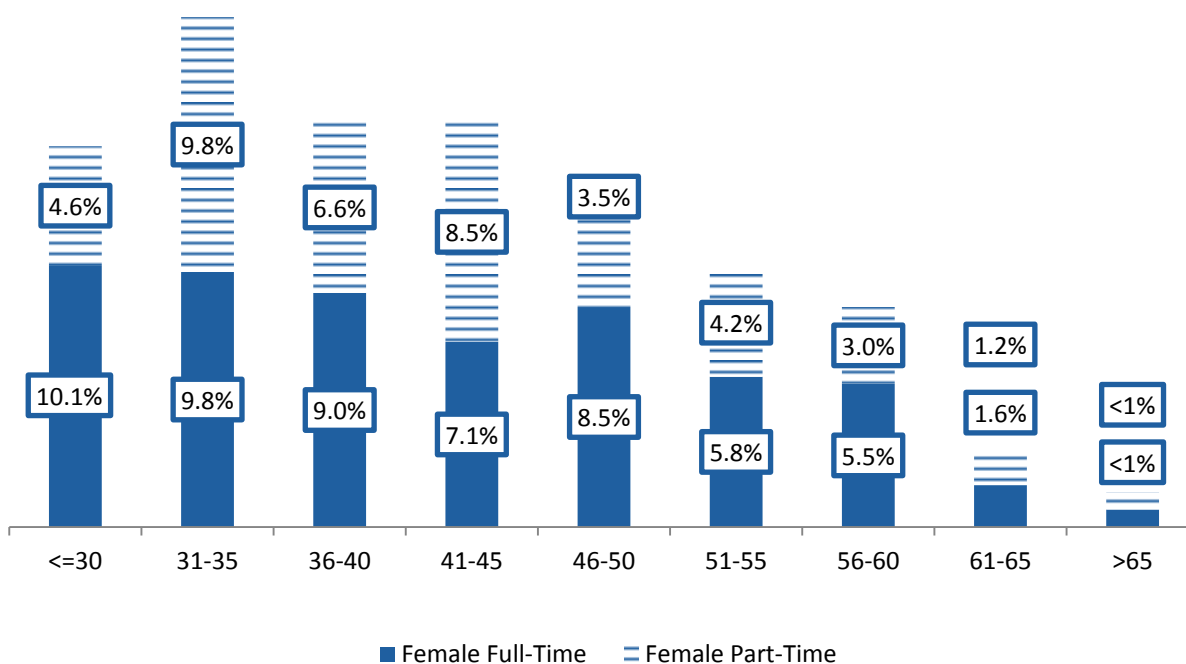


FIGURE 9: WORK STATUS OF FEMALE PHARMACISTS BY AGE



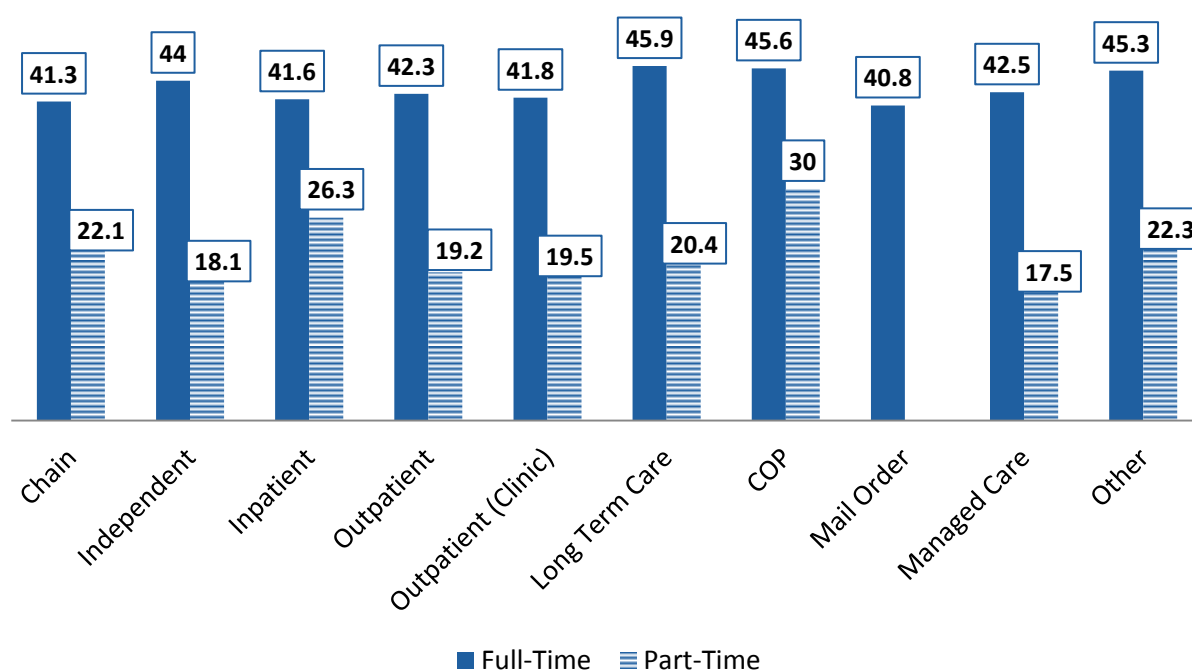
6.2.b: Practice Hours¹⁷

Average hours worked per week for one part-time and one full-time position is similar to hours worked in these positions in 2005. For instance, the mean weekly hours for full-time positions was 43.2 hours per week in 2005, and 42.3 hours per week in 2013. Nationally, full-time pharmacists worked an average of 43.8 hours per week in 2009^{XI}.

For part-time pharmacists, the average hours worked per week was 21.6 in 2005 and 21.1 hours per week in 2013. Nationally, the average part-time pharmacist worked 19.4 hours per week in 2009^{XI}.

In addition, the UMEC asked licensed pharmacists how many hours per week they would ideally like to work. The data indicates that the average part-time pharmacists in Utah is working on average the “*ideal*” number of hours they would like to work each week, while the average full-time employee is working 4.4 more hours than they would “*ideally*” like to work.¹⁸

FIGURE 10: UTAH PHARMACIST HOURS PER WEEK BY WORK SETTING AND POSITION TYPE



*Full-Time only "One full-time position"

**Part-Time only "One part-time position"

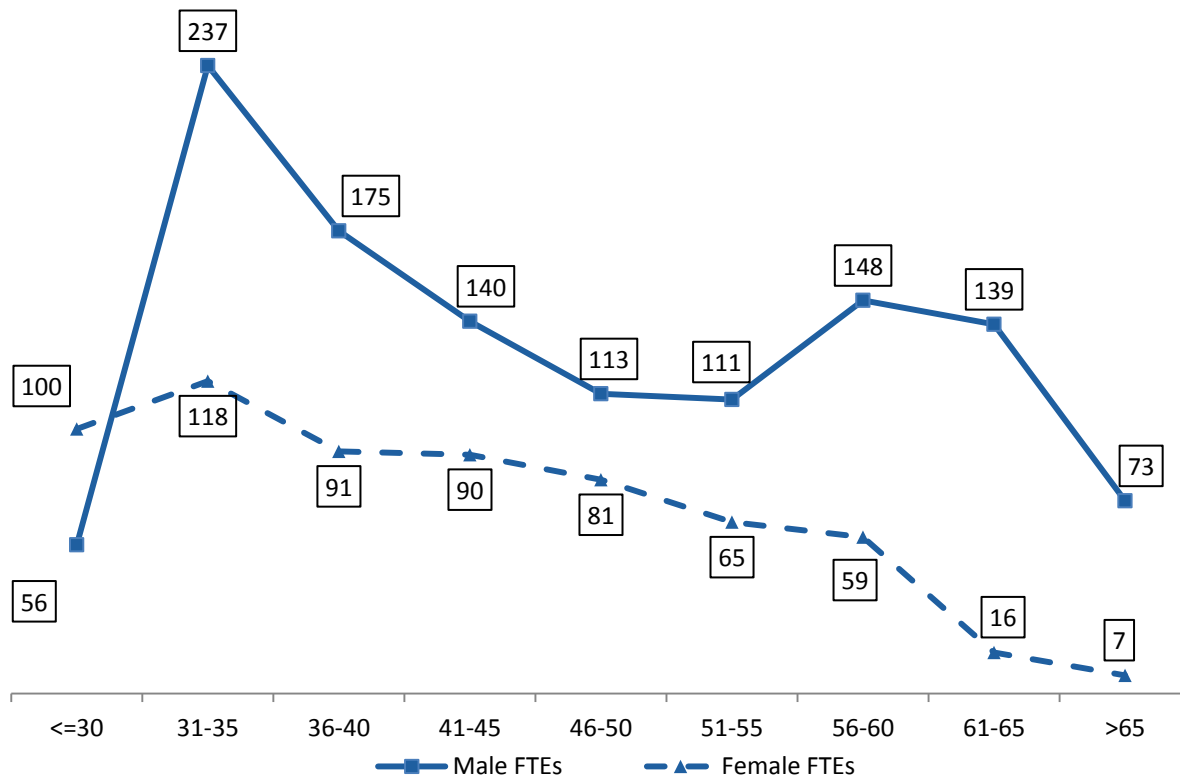
¹⁷ Here we are looking at strictly one full-time position and one part-time position. Average hours for a full-time and part-time employee is skewed when combining additional positions that contain average weekly hours above the norm for these two primary work positions.

¹⁸ Question 29 on the survey asked each pharmacist “how many hours would you choose to work”. The comparison here is the average hours actually worked vs the average “ideal” hours obtained from this question.

6.2.c: Full-Time Equivalent Employees (FTEs) Produced, 2013¹⁹

Utah's pharmacist workforce is currently producing an estimated **1,923** FTEs in 2013 – 76% of these were produced in retail and hospital inpatient settings. Pharmacists under the age of 46, a good indicator of workforce availability for the next two decades, are producing **55%** of all FTEs (608 FTEs produced by males, 399 by females). Likewise, pharmacists over the age of 56, likely retirees within the next two decades, produce around **23%** of all FTEs (360 FTEs produced by males, 81 by females). See Appendix A (Table 5) for a breakdown of FTEs across work setting.

FIGURE 11: FTEs ACROSS AGE AND GENDER



* Only 1,818 FTEs represented here. Not all respondents provided age.

Adjusting for FTEs, every female produces **.83** FTE to each 1 FTE produced by male counterparts. The ratio of female FTE to male FTE is up from .79:1.0 in 2005. The majority of part-time work is still being performed by females and this is the reason for the average lower gender FTE ratio.

¹⁹ 1.0 Full-Time Equivalent (FTE) is calculated as a pharmacist working 40 hours per week, 52 weeks per year. For example, a part-time pharmacist working 20 hours per week would produce .5 FTE, whereas a pharmacist working 60 hours would be producing 1.5 FTEs.

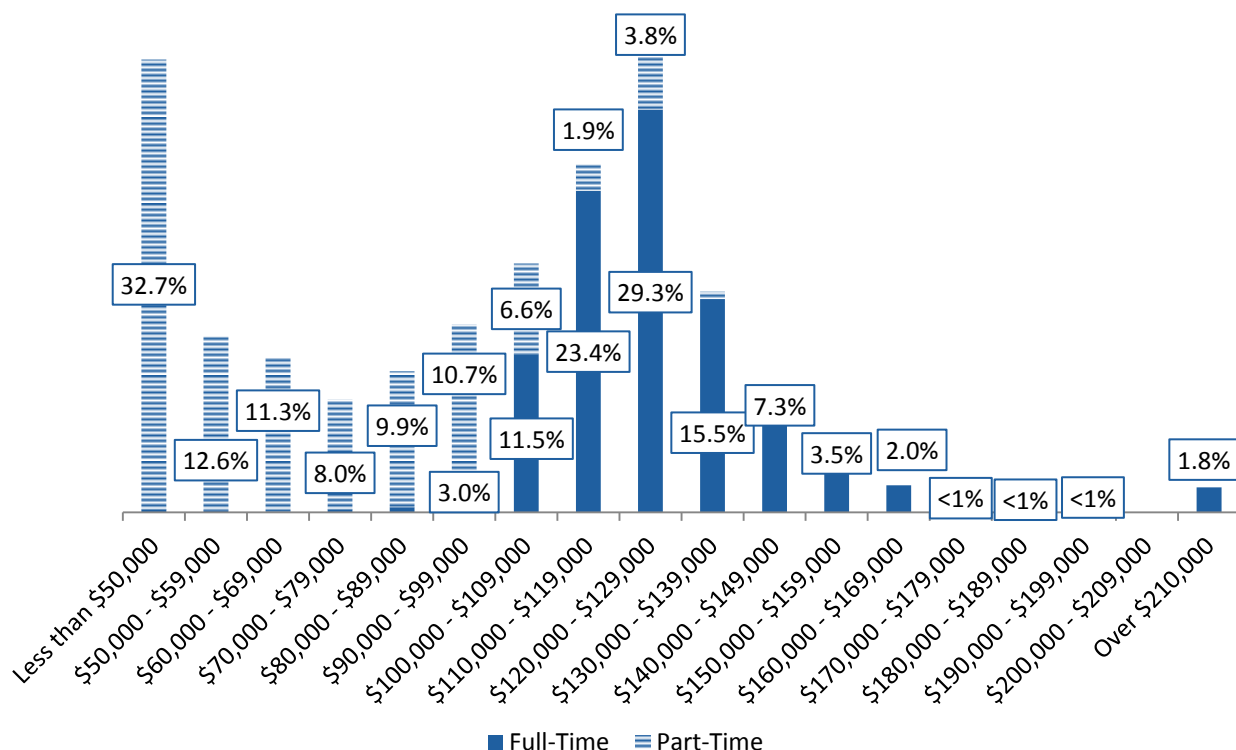
6.3: COMPENSATION

The UMEC used compensation ranges to gather information on annual gross compensation for Utah pharmacists.²⁰ Median annual wage for all pharmacists falls within the \$110,000-\$119,000 category – with the mean annual wage for all full-time Utah pharmacists as approximately **\$118,658**.²¹ The FTE adjusted mean annual wage for all full-time pharmacists is \$121,313 per FTE.²² In addition, **64%** of pharmacists indicated that their income increased from five years ago – the average increase for this group is 10.3%.

80% of all full-time pharmacists make between \$100,000 and \$139,000 per year.

The BLS estimates that the national full-time pharmacist makes a mean annual wage of \$116,500 in 2013. The BLS also estimates that the mean Utah pharmacist makes an annual wage of \$112,940.^{xvi} See Appendix A (Table 6) for a further breakdown of BLS data for Utah and the Western Region.

FIGURE 12: WAGE BY ALL ACTIVE PHARMACISTS



²⁰ The categories range from “Less than \$50,000” up to “Over \$210,000”. Each category outside of these two consisted of a \$9,999 range (for example, \$50,000-\$59,000 and \$60,000-\$69,000 categories).

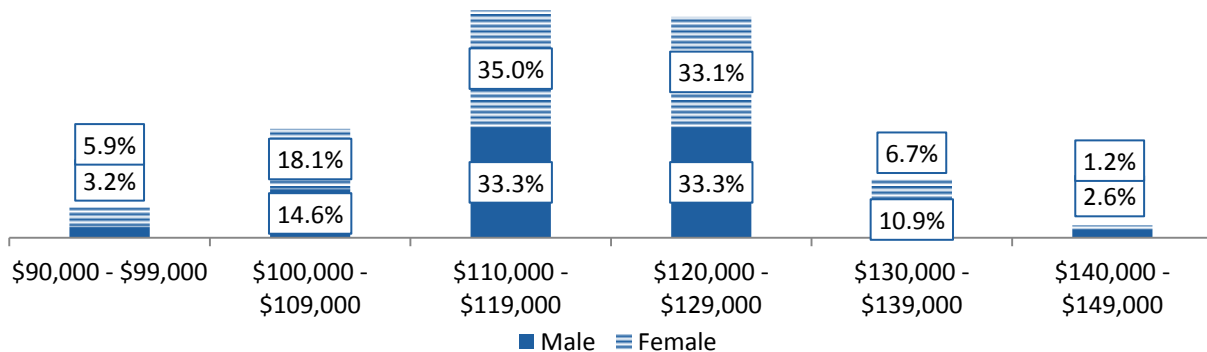
²¹ The mean annual wage is calculated using the average of each compensation category (for example, the average of the category \$110,000-\$119,000 is \$115,000). Full-time pharmacists are focused on here because of the inability to establish an accurate mean for individuals in the “Less than \$50,000” and “Over \$210,000” categories. The mean annual for all pharmacists is likely less than this number given the percentage of individuals who make less than \$50,000.

²² The FTE adjusted mean wage for all full-time female pharmacists is \$117,944 and for all full-time males it is \$122,758.

6.3.a: Compensation for Full-time Staff Pharmacists²³

The UMEC estimates that the average full-time staff pharmacist makes an annual median wage that falls within the \$110,000 and \$119,000 compensation category. The UMEC also estimates that the annual mean wage for all full-time staff pharmacists is **\$118,729**. When adjusting for FTEs, full-time male staff pharmacists make **\$116,820** and full-time female staff pharmacists make **\$115,452** per FTE. See Appendix A (Figure 2) for a graph on part-time staff pharmacist compensation.

FIGURE 13: FULL-TIME STAFF PHARMACISTS: WAGE BY GENDER



Work Setting	Male	Female
<i>Retail – Chain</i>	\$119,000	\$118,000
<i>Retail – Independent</i>	\$114,000	\$118,000
<i>Hospital - Inpatient</i>	\$117,000	\$114,000
<i>Outpatient Clinic</i>	\$117,000	\$119,000
<i>Hospital – Outpatient</i>	\$111,000	\$114,000
<i>Long Term Care Center</i>	\$109,000	\$110,000
<i>College of Pharmacy</i>	\$115,000	\$105,000
<i>Managed Care Facility</i>	\$115,000	\$115,000
<i>Mail Order Pharmacy</i>	\$112,000	\$130,000
<i>Other</i>	\$105,000	\$107,000
AVERAGE	\$117,000	\$115,000

²³ Staff pharmacists make up 58% of the total active pharmacist workforce in Utah. These individuals include Clinical Pharmacists, Consultants, Staff Pharmacists, and Relief Pharmacists.

²⁴ The mean annual wage is calculated using the average of each compensation category. For example, the average of the category \$110,000-\$119,000 is \$115,000. Here the mean wage is calculated then adjusted to reflect the mean per FTE for each category. Numbers here are rounded to nearest thousand dollar.

6.3.b: Compensation for Pharmacists in Management Positions

Roughly one-third (32.8%) of the current active pharmacists workforce in Utah identify themselves as working in a management position. The average full-time pharmacists working in a management position makes a median annual income between \$130,000 and \$139,000. The UMEC estimates that the mean annual income for full-time pharmacists in management is **\$133,250**.²⁵

FIGURE 14: FULL-TIME MANAGEMENT PHARMACISTS: WAGE BY GENDER

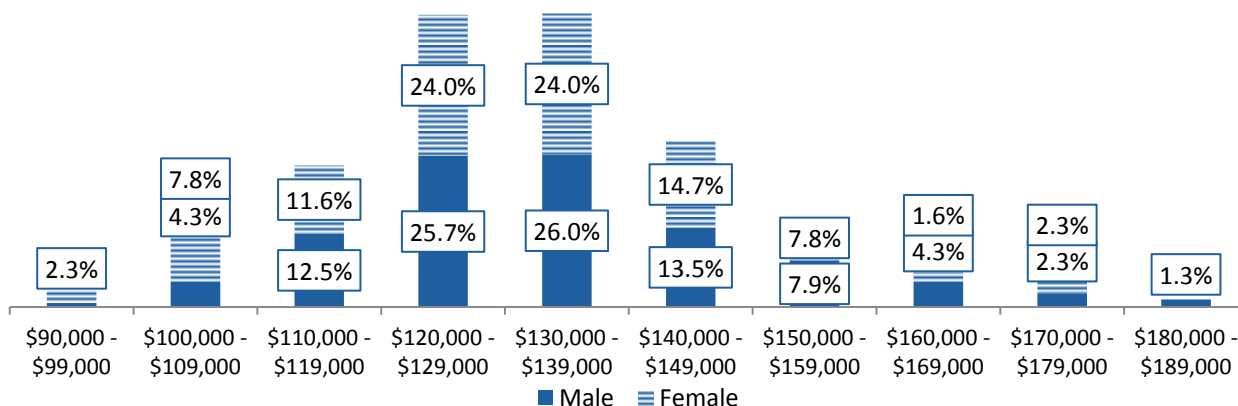


Table 8
FTE Adjusted Mean Wages for Full-Time MANAGEMENT by Work Setting²⁶

Work Setting	Male	Female
<i>Retail – Chain</i>	\$128,000	\$122,000
<i>Retail – Independent</i>	\$118,000	\$123,000
<i>Hospital - Inpatient</i>	\$132,000	\$123,000
<i>Outpatient Clinic</i>	\$118,000	\$123,000
<i>Hospital – Outpatient</i>	\$127,000	\$129,000
<i>Long Term Care Center</i>	\$129,000	----
<i>College of Pharmacy</i>	----	----
<i>Managed Care Facility</i>	\$125,000	\$112,000
<i>Mail Order Pharmacy</i>	\$111,000	----
<i>Other</i>	\$122,000	\$123,000
AVERAGE	\$127,000	\$122,000

²⁵ The FTE adjusted mean annual compensation for male pharmacists in management is \$126,809, and for female pharmacists it is \$122,160.

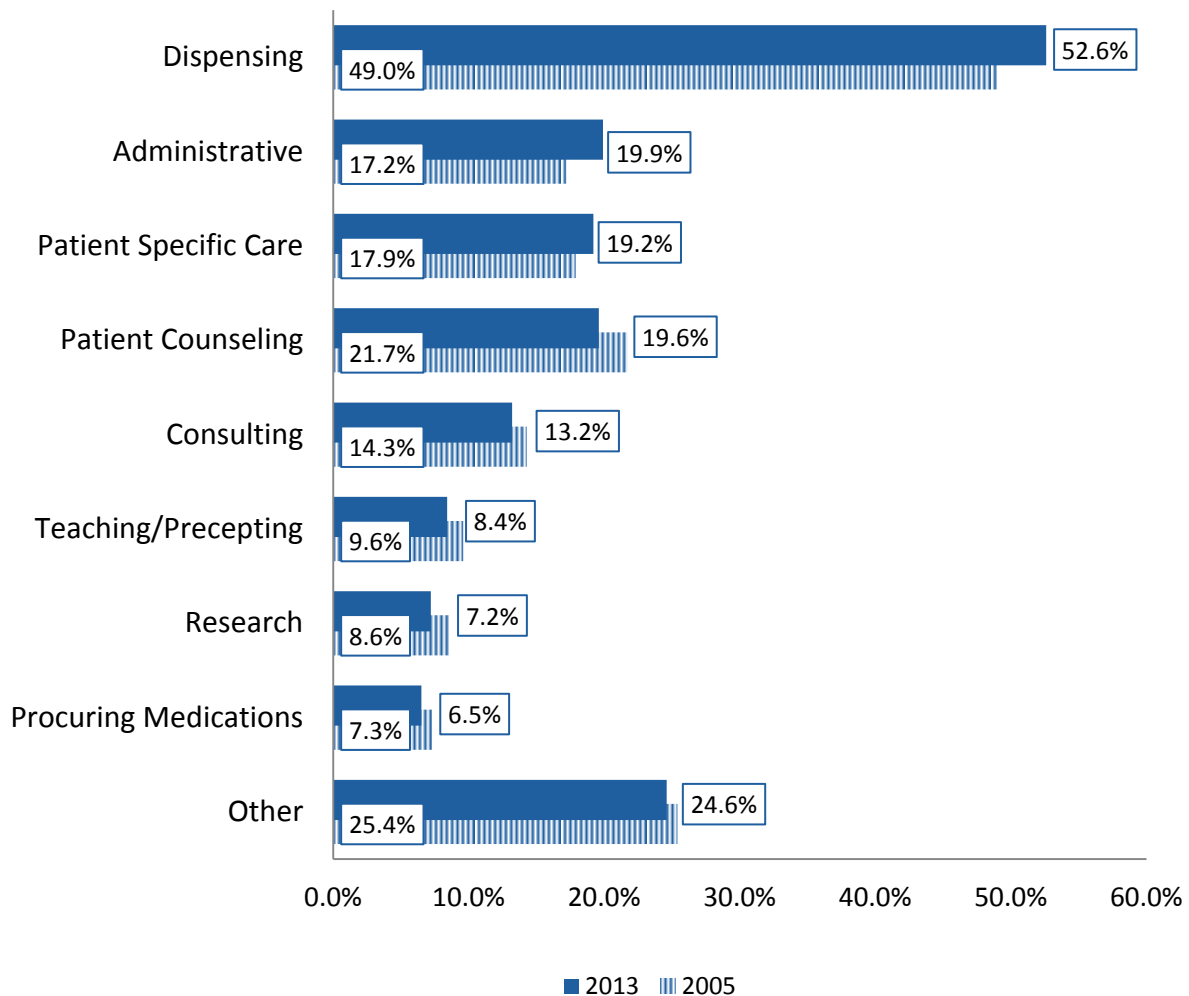
²⁶ The mean annual wage is calculated using the average of each compensation category. For example, the average of the category \$110,000-\$119,000 is \$115,000. Here the mean wage is calculated and adjusted to reflect the mean per FTE for each category. Numbers here are rounded to nearest thousand dollar.

SECTION 7: PRACTICE WORKLOAD

Over the last decade the scope of services provided by pharmacists has expanded. While the role of the pharmacists is changing in certain work settings, the overall time spent in various activities has remained similar to percentages captured by the UMEC in 2005. See Appendix A (Table 7) for a breakdown of time spent on activities by staff pharmacists across work settings.

61% of pharmacists indicated that their workload has increased since last year.

FIGURE 15: PERCENTAGE OF TIME SPENT IN VARIOUS ACTIVITIES BY UTAH PHARMACISTS²⁷



Note: Percentages above are averages for all work settings. The percentage total does not equal 100% due to differentiation in pharmacist roles across work settings.

²⁷ The percentages here have had the top and bottom 5% trimmed to remove outliers in order to establish a more valid mean for all pharmacists.

Figure 15 illustrates the average time spent in each work activity by the “typical” pharmacist in Utah. These percentages are averages compiled from each work-setting and include a variety of different pharmacist types. As such, a pharmacist working in retail will differ in time spent in certain work activities relative to a pharmacist in other settings and roles. Nevertheless, the average time spent by the typical pharmacist in each work setting is very similar to that of their counterparts in 2005.

In addition, the typical pharmacist in Utah spends roughly the same amount of time per activity as their national counterparts. Nationally, pharmacists spend 55% dispensing and distributing drugs, followed by 16% devoted to patient specific care, and 14% in administrative work. The typical Utah pharmacists spends an average of 53% on dispensing and distributing activities, 19% on patient specific care, and 20% on administrative work. The overlap of related work activities makes delineating exact time spent per activity difficult. Nevertheless, current averages across work settings illustrate that the typical Utah pharmacist is spending comparable amount of time across similar activities as their archetypal national counterparts.

7.1: COUNSELING PATIENTS

An important work requirement found across each work setting is for pharmacists to counsel patients on medication regimens. Over one-quarter (**28%**) of the workforce indicate that they currently do not have sufficient time to counsel patients. The vast majority of these individuals fall within retail and hospital inpatient settings. For retail pharmacists, 37% indicate that they do not have sufficient time to counsel patients, with 23% of hospital inpatient pharmacists indicating the same.

7.2: RETAIL WORKLOAD

Prescriptions filled per hour are identical between retail chain and independent settings. The UMEC estimates that full-time pharmacists in retail chain stores fill an average **22.9** prescriptions per hour. Of these pharmacists, **66%** report that the prescriptions filled per day increased over the last five years. In addition, 71.4% of retail pharmacists also stated that they spent more time on insurance issues relative to five years ago.

66% of retail pharmacists perceive that prescriptions filled per day has increased from five years ago.

7.3: MANAGEMENT-SPECIFIC EXPERIENCES AND APPROACHES

7.3.a: Filling Positions

One-third (34.6%) of pharmacists identify themselves as either management or an owner/executive officer²⁸. For retail management, 83.5% were able to fill a budgeted position within 3 months. By six months 92.8% of retail pharmacists were able to fill a budgeted position. For hospital inpatient management, 72.1% were able to fill a budgeted position within 3 months – by 6 months 88.4% were able to fill a budgeted position. Only 7.2% of retail management and 11.6% of hospital inpatient management experienced a wait of over 6 months to fill a position.

7.3.b: Managerial Experiences

Over the last year, 244 (33%) pharmacists in managerial positions have restructured the work schedules of their pharmacists to save labor costs. In addition, 143 (19%) managerial pharmacists issued a mandatory reduction in their pharmacists' work hours. Only 48 (6.5%) pharmacists in executive positions have enacted pharmacist layoffs over the last year.

7.3.c: Managerial Coping Techniques for Prescription Growth

Roughly two-thirds (66.1%) of pharmacists in managerial positions indicate that the average number of prescriptions they fill each day has increased since five years ago. The top coping mechanisms they have used to meet the increased demand include **1)** increase technician workloads/hours, **2)** recruiting additional pharmacy technicians, **3)** increasing automation and **4)** increasing pharmacist workloads/hours. Retail managers indicated that their top three coping techniques are to increase technician workloads/hours, recruit additional technicians, and increase pharmacist workloads/hours. For hospital inpatient management, the top three coping techniques are to increase automation, increase technician workloads/hours, and increase pharmacist workloads/hours.

Table 9		
Managerial Coping Techniques for Increased Prescription Demand		
Technique	UMEC, 2005	UMEC, 2013
<i>Increase Technician Workloads/Hours</i>	36.6%	55.20%
<i>Recruit Additional Pharmacy Technicians</i>	39.4%	49.10%
<i>Increase Automation</i>	37.9%	39.50%
<i>Increase Pharmacist Workloads/Hours</i>	58.6%	38.50%
<i>Recruit Additional Pharmacists</i>	34.3%	19.00%
<i>Increase Prepackaging</i>	12.0%	10.90%
<i>Other</i>	4.7%	2.70%

²⁸ 42% of males identify themselves as management/owners, while 21% of females identify themselves as being in one of these executive positions. Pharmacists in management positions are fairly well distributed throughout the workforce with 54.8% of pharmacists in management under the age of 45. In addition, 52.0% of males in management are under the age of 45, while 62.6% of females in management are also under 45.

7.4: TEAM WORK

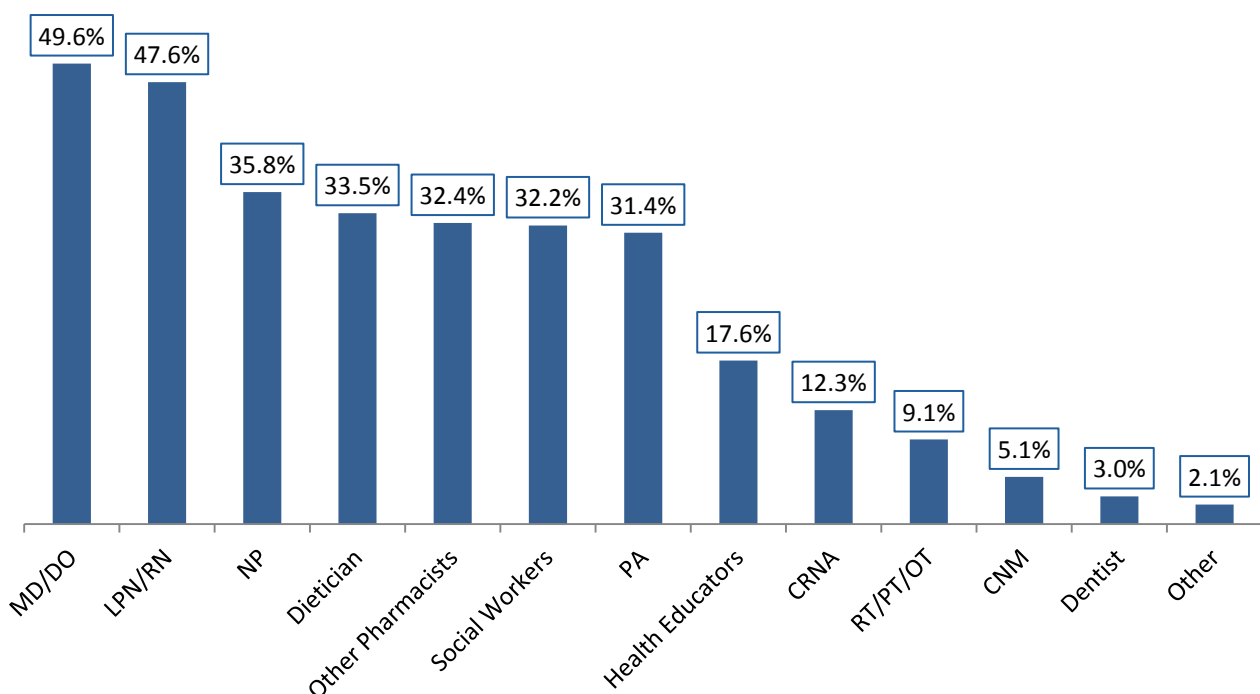
Utilizing pharmacist services to compliment both the productivity of other healthcare professions and to improve patient outcomes has been an increasing trend over the last decade. The UMEC identified that 35% of pharmacists worked in multi-disciplinary care teams in 2005.²⁹ By 2013, over one-half (**53%**) of all active Utah pharmacists state that they currently work within a multi-disciplinary care team – with 86% of inpatient pharmacists, and 36% of retail pharmacists working in such teams.

Half of all active Utah pharmacist state that they work in some type of multi-disciplinary care team – up from 35% in 2005.

7.4.a: Multi-disciplinary Care Team Members

As with 2005, the top healthcare providers that pharmacists associate themselves working with in care teams are MD/DOs and LPN/RNs. The range of multi-disciplinary care team members is still broad, ranging from dentist to physician assistants (PAs). See Appendix A (Table 8) for a breakdown of retail and hospital inpatient pharmacist by multi-disciplinary team members. Figure 16 illustrates a percentage breakdown of who indicated that they work in a multi-disciplinary care team.

FIGURE 16: UTAH PHARMACISTS IN MULTI-DISCIPLINARY TEAMS BY TEAM MEMBER



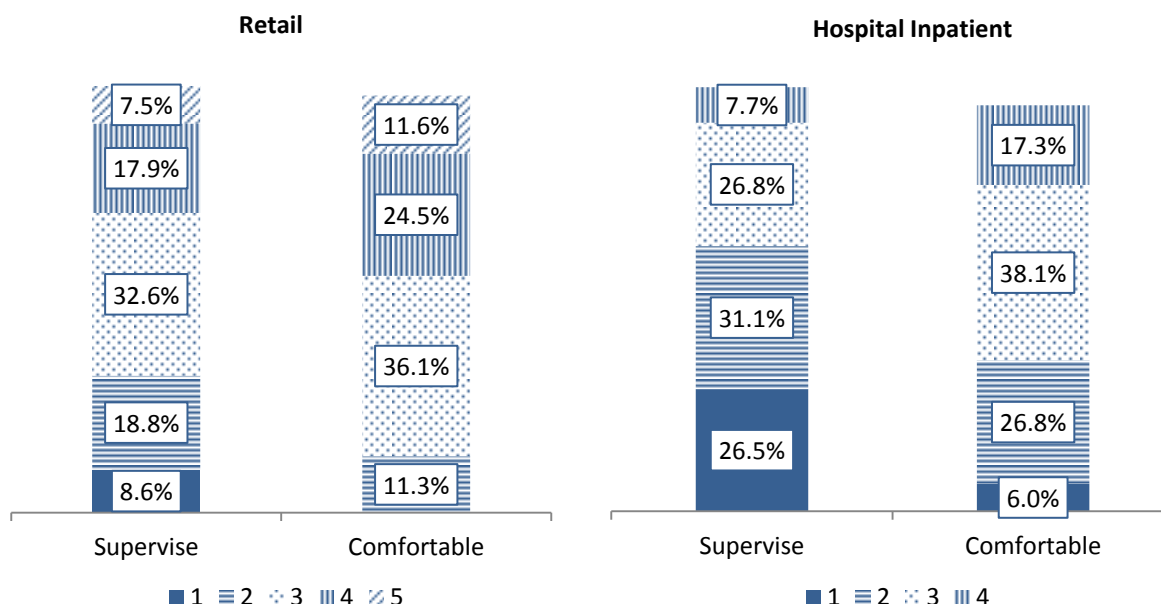
²⁹ This percentage is taken out of retail pharmacists only.

7.4.b: Supervising Pharmacy Technicians

Supervising pharmacy technicians is a responsibility of pharmacists found across most work settings. The UMEC estimates that the average pharmacist supervises **3** pharmacy technicians per shift – with **82%** of all pharmacists supervising between 1 and 4 pharmacy technicians per shift.³⁰ In addition, the average pharmacist indicates that they are “*comfortable*” supervising roughly **4** technicians per shift – with **89%** feeling comfortable supervising between 1 and 5 pharmacy technicians per shift.

The average Utah pharmacist supervises 3 pharmacy technicians per shift. 89% of all pharmacists feel comfortable supervising between 1 and 5 technicians per shift.

FIGURE 17: PHARMACY TECHNICIANS: NUMBER OF TECHNICIANS PHARMACISTS CURRENTLY SUPERVISE VS NUMBER OF TECHNICIANS THEY FEEL COMFORTABLE SUPERVISING PER SHIFT: BY WORK SETTING



7.4.c: Precepting Pharmacy Students

Precepting pharmacy students is a task that roughly **50%** of all pharmacists in Utah undertake. The majority of these pharmacists (48%) precept in both Introductory Pharmacy Practice (IPPE) and Advanced Pharmacy Practice (APPE) areas. Individually, roughly one-third of pharmacists who precept focus strictly on IPPE areas, while one-fifth focus on strictly APPE areas.

³⁰ The first survey mailed out did not include “per shift” on the supervision of pharmacy technician question. The responses, however, were comparable to the responses given in the following surveys that included “per shift” in the questionnaire. In addition, responses beyond 10 technicians per shift were treated as outliers and excluded from the analysis.

SECTION 8: WORK EXPERIENCES AND OUTLOOK

Capturing work experiences can help give insight into certain workforce trends. Specifically, accurately identifying if pharmacists are moving from one setting to another, why they are transitioning, and if they have experienced adverse employment issues are all important work experiences to identify.

8.1: AVERAGE YEARS WITH CURRENT EMPLOYER

The duration of time pharmacists have spent with their current employer can help identify how often pharmacists are transitioning work sites and/or employers. The average duration across age cohorts can also help illuminate trends that may occur across age.

FIGURE 18: AVERAGE YEARS EMPLOYED BY CURRENT EMPLOYER ACROSS AGE COHORTS

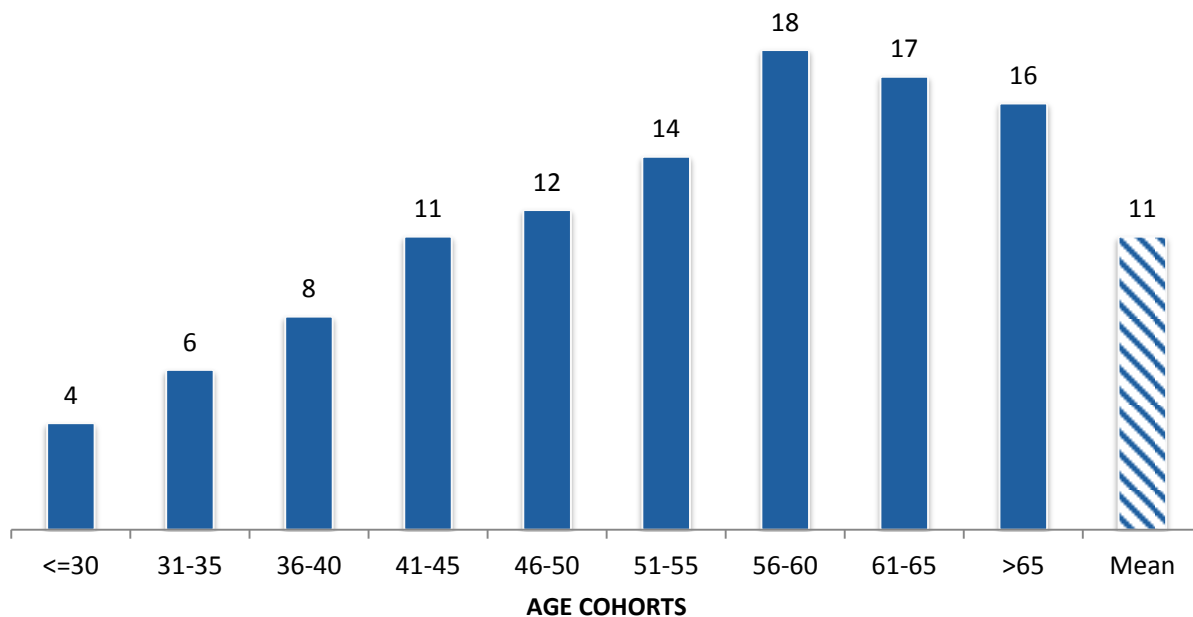


Figure 18 illustrates that Utah's pharmacist workforce tends to be fairly stable. Specifically, the figure suggests that the average pharmacist is not very mobile throughout the majority of his/her career. As the age cohort increases so does the average duration with the current employer until age 61.

8.2: ADVERSE EXPERIENCES IN PAST TWO YEARS

Over the last two years: 1) an estimated 3.6% of the entire workforce reported being unemployed involuntarily; 2) 1.8% of the entire workforce reported their hours were decreased involuntarily; and 3) 6.7% of the workforce reported working part-time when they desired full-time work. In addition, 16.5% of the pharmacist workforce in Utah indicated that they switched employers within the past two years (See Tables 11 and 12 below).

Work Setting	Left	Went to
<i>Retail – Chain</i>	178	85
<i>Retail – Independent</i>	51	77
<i>Hospital - Inpatient</i>	48	84
<i>Hospital - Outpatient</i>	17	12
<i>Long Term Care Center</i>	12	19
<i>Managed Care Facility</i>	7	9
<i>Outpatient Clinic</i>	<5	14
<i>College of Pharmacy</i>	<5	<5
<i>Mail Order Pharmacy</i>	<5	<5
<i>Other</i>	29	38
TOTAL	352	

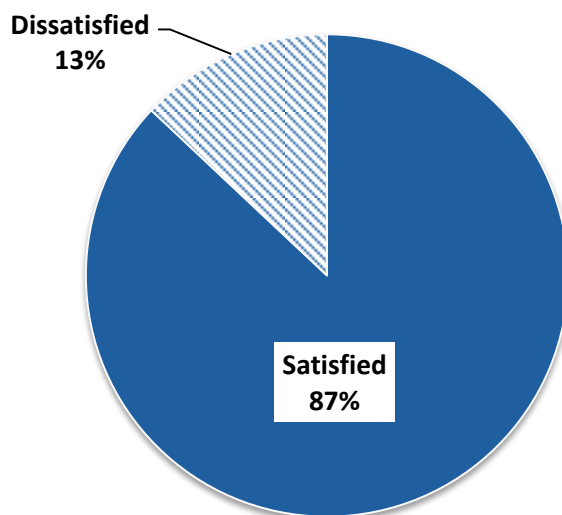


Reason	Pharmacists
<i>Desire for Change</i>	127
<i>Personal/Family Reasons</i>	119
<i>Professional Advancement</i>	109
<i>Preferred Hours</i>	102
<i>Better Work/Educational Fit</i>	92
<i>Higher Pay</i>	85
<i>More Challenging</i>	84
<i>Work Responsibilities</i>	70
<i>Moved</i>	48
<i>Laid Off</i>	33
<i>Position Elimination</i>	18
<i>Other</i>	23

8.3: OUTLOOK

A majority of pharmacists (**61%**) perceive that their workload has increased in the last year. The average perceived workload increase is 16%. However, while a majority of pharmacists have experienced a perceived increase in workload, the vast majority (**87%**) are nonetheless satisfied with their current work situation.

FIGURE 19: JOB SATISFACTION



SECTION 9: RESIDENCIES

The traditional dispensing role of pharmacists has expanded in various settings to focus on contributing to healthcare team productivity and overall improved patient outcomes.^{xvii} Accordingly, not only is there a demand for current pharmacists to hold skills in patient-centered care, but there is also a growing concern over whether the emerging supply of future pharmacists will be able to move beyond supplying a commodity to also providing direct patient care.^{xviii}

The American College of Clinical Pharmacy (ACCP), alongside the American Society of Health-System Pharmacists (ASHP), both advocate for post-graduate training (PGY1) as a future requirement for pharmacists who work in direct patient-care roles.^{xviii} Such a recommendation aspires to have PGY1 training as an expectation of most future entry-level pharmacy positions. This prerequisite is meant to foster the development of clinical and general competencies “in managing medication-use systems and supports optimal medication therapy outcomes for patients with a broad range of disease states.”^v Accordingly, this standard is aimed, in part, at contributing to the doctor of pharmacy curriculum which aims at ensuring that pharmacy graduates possess the “basic knowledge, skills and abilities to practice pharmacy” within new patient care roles.^{xix}

9.1: PGY1/PGY2 TRAINING OF UTAH’S PHARMACISTS

The ACCP estimates that approximately 75% of annual graduates will need to complete a PGY1 residency by 2020.^{xviii} This projection assumes that pharmacists will continue to incorporate direct patient care roles into their work regimen over the next decade. The UMEC estimates that roughly **16%** of active Utah pharmacists have completed either a PGY1 and/or PGY2 residency. In addition, only **1%** of the active Utah pharmacists workforce indicated that they are either seeking or enrolled in either a PGY1 or PGY2 residency.

There are identifiable trends in age dispersion and work setting utilization of residency-trained pharmacists in Utah.^{xviii} For one, **77%** of pharmacists who have completed a residency are under the age of 45 and 65% are under the age of 40. In addition, over half (**53%**) of all pharmacists with residency training are in hospital inpatient specific settings. Roughly **75%** of all residency trained pharmacists are in hospital inpatient, hospital outpatient, and outpatient clinic settings. Currently, **11%** of residency-trained pharmacists work in the retail setting.

Over half (**54%**) of pharmacists indicated that they are not interested in completing a residency. Of these who stated that they are not interested, over half (**56%**) are under the age of 45. Moreover, roughly 30% of all pharmacists not interested in completing a residency are under the age of 35.

9.2: WORK EXPERIENCES OF PHARMACISTS WITH PGY1/PGY2 TRAINING

The demand for pharmacists to be trained in patient-centered practices is seen throughout many work settings. This type of demand, if found in a normal marketplace, would tend to compensate pharmacists with increased clinical skills relative to their counterparts who have not completed a residency.

9.2.a: Compensation

The UMEC identifies that there is currently not a significant difference in annual total compensation between individuals with a PGY1 and/or PGY2 residency relative to pharmacists without the training. Indeed, a full-time staff pharmacist with residency training makes the same total annual income as a full-time staff pharmacist without residency training – approximately \$118,000 per year.

However, adjusting for FTEs, the average full-time staff pharmacists with residency training can expect to make approximately **\$113,000** per FTE, while their counterpart without a residency can expect to make approximately **\$117,000** per FTE. The lower compensation per FTE for PGY1/PGY2 trained pharmacists is consistent with that fact that pharmacists with residency training, while making the same annual wage as their counterparts without a residency, work on average almost two hours per week more.

In addition, the average pharmacist who has completed a residency indicates an mean increased workload of 17% since last year. Yet, while the average workload has increases, the vast majority (**90%**) of these pharmacists is satisfied with their current work situation.

Of importance, full-time staff pharmacists who have completed a residency reported experiencing less adverse work experiences than their non-residency trained counterparts. For example, 9.8% of full-time staff pharmacist with a residency worked part-time when they desired full-time work – compared to 21.6% of full-time staff pharmacists without a residency. Moreover, only 1.5% of these residency-trained pharmacists reported experiencing an involuntary reduction in hours over the last two years – 6.4% of their non-residency trained counterparts experienced an involuntary reduction in hours.

QUICK REVIEW: ACTIVE UTAH PHARMACISTS

- As of 2013, there are **2,135** active pharmacists in Utah – **70.1%** of total licenses.
- In 2013, the pharmacist-to-100,000 population ratio is **73.6** – up from 64.3 in 2005 and 60.2 in 2002.
- **83.5%** of pharmacists indicate that they are Caucasian, **5.0%** Asian, and **1.0%** Hispanic – (Hispanic asked as an ethnicity alongside race).
- **37.6%** of pharmacists are females – an increase from 35.2% in 2005, but well below the national average of 56.0%.
- The average pharmacist is **47.5** years old (males average 50.4 years old and females average 42.6 years old).
- **77.7%** of pharmacists work in four of Utah’s twelve Local Health Districts: Salt Lake (47.1%), Utah (12.3%), Davis (10.2%) and Southwest (8.1%).
- **83.2%** of pharmacists work in three BLS economic regions in Utah: Salt Lake City (56.46%), Ogden-Clearfield (15.70%), and Provo-Orem (11.08%).
- **52.0%** of pharmacists reported working in retail settings – down from 65.4% in 2005.
- **25.5%** of pharmacists reported working in hospital inpatient positions – up from 20.0% in 2005.
- **73.3%** of pharmacists work at least one full-time job – **84%** of males and **56.3%** of females work at least one full-time position.
- The average full-time pharmacist worked **42.3** hours per week in 2013. The average part-time pharmacist worked **21.1** hours per week.
- Utah pharmacists produced an estimated **1,923** FTEs in 2013 – 76% of which came from retail and hospital inpatient settings.
- The average male produces 1 FTE, while average female produces **.83** FTES. This ratio is up from .79:1 which was the gender ratio estimated in 2005.
- UMEC estimates that the average full-time pharmacists make approximately \$118,000 annually. The median category for annual compensation for all full-time pharmacists is \$110,000 - \$119,000.
 - **80%** of all full-time pharmacists indicate that they make \$100,000 - \$139,000 annually.
 - Full-time staff males are estimated to make approximately **\$116,820** per FTE while full-time staff females are estimated to make **\$115,452**.
 - The average full-time pharmacists working in a management position is estimated to make approximately **\$133,000** annually. The average male in a management position is estimated to make \$127,000 per FTE, while females are estimated to make \$122,000 per FTE.

- The average pharmacist still spends a majority of their time dispensing medications (**52.6%**), **19.9%** of their time in administrative work, **19.6%** of time on patient counseling, and **19.2%** of time on patient specific care.
 - **28%** of the pharmacists indicate that they currently do not have sufficient time to counsel patients.
- The average retail pharmacist dispenses an average of **22.9** prescriptions per hour.
 - **66%** of retail pharmacists perceive an increase in prescriptions filled per day from five years ago.
 - **71.4%** of retail pharmacists perceive that they spend more time on insurance issues relative to five years ago.
 - **66.1%** of pharmacists in management positions indicate that the average number of prescriptions they fill per day has increased from five years ago.
 - The top coping techniques utilized by management to deal with increased prescription demand are: 1) Increase technician workloads/hours, 2) Recruit additional pharmacy technicians, 3) Increase automation and 4) Increase pharmacist workloads/hours.
- **79%** of pharmacists in management positions were able to fill a budgeted position within three months.
- **53%** of pharmacists state that they work within a multi-disciplinary care team.
 - The most common care team members are: MD/DOs (49.6%), LPN/RNs (47.6%), NPs (35.8%), Dietician (33.5%), Other Pharmacists (32.4%), Social Workers (32.2%), and PAs (31.4%).
- The average pharmacist supervises **3** pharmacy technicians per shift – **82%** supervise between 1 and 4 pharmacy technicians per shift.
 - **89%** of pharmacists feel comfortable supervising between 1 and 5 pharmacy technicians per shift.
- **49%** of pharmacists precept pharmacy students – 48% of these precept in both Introductory Pharmacy Practice (IPPE) and Advanced Pharmacy Practice (APPE) areas.
- Adverse employment experiences: **3.6%** of all pharmacists reported being unemployed involuntarily within the last two years. In addition, **1.8%** reported having hours decreased involuntarily, and **6.7%** reported working part-time when they desired full-time work.
- **61%** of pharmacists perceive that their workload has increased since last year.
- **87%** of pharmacists are satisfied with their current work situation.

FUTURE UTAH PHARMACIST WORKFORCE

SECTION 10: UTAH'S FUTURE PHARMACIST WORKFORCE – FUTURE DEMAND

“Future pharmacist workforce projections must incorporate scenarios in which pharmacists would increasingly be involved in non-dispensing and direct patient care roles.”^{xx}

Over the past decade, pharmacists have undertaken roles in different sectors outside of their traditional retail setting. Being able to capture demand for both retail and non-retail pharmacists is both an arduous and essential task. This section focusses on identifying the necessary demand indicators for the future retail and non-retail pharmacist workforce in Utah.

10.1: PRESCRIPTION VOLUME IN UTAH

10.1.a: Retail Prescriptions

In 2005, retail pharmacists filled approximately 23,274,884 prescriptions in Utah.^{xv} UMEC data indicates that there were roughly 612 retail FTEs in Utah who prescribed the 23.2 million prescriptions. The average retail FTE filled approximately 17 prescriptions per hour during 2005.

Retail prescription volume increased to 30,920,722 in 2013.^{xxi} UMEC data estimates that there were 952 retail FTEs in Utah who filled and distributed these medications. The average retail FTE filled approximately 32,480 prescriptions during 2013 – or roughly 15 prescriptions per hour.

10.1.b: Population Growth

Utah's population hovered around 2.77 million in 2010 – with 31.5% under the age of 18, 59.5% between 18-64 years old, and 9.0% of the population 65 and over. The Utah Governor's Office of Management and Budget (GOPB) estimates a 2.06% annual average population growth from 2010 to 2030.^{xxii} By 2030, Utah's population is estimated to be over 3.91 million – with 26.1% under the age of 18, 58.2% between 18-64 years' old, and 14.1% over the age of 65.

10.1.c: Estimating Demand for the Future Retail Workforce

UMEC data indicates that retail pharmacists spend a majority of their workday dispensing medications. The percentage of the time spent filling and distributing medications may change over the next decade for retail pharmacists; however, it is assumed that retail pharmacist will still spend a majority of their time on this activity for the foreseeable future. The demand for the future retail workforce in Utah thus depends on two main inputs: 1) the prescription volume demanded by the population; and 2) the number of retail FTEs needed to fill these prescriptions.

Estimating the number of prescription drugs demanded in Utah over the next decade involves identifying the population make-up alongside prescription utilization characteristics. Utah GOPB data, alongside Kaiser Family Foundation Data, provide both the population distribution

across age, and the retail prescriptions filled per capita by these same age groups.^{31xxiii} Attributing appropriate annual increases to these numbers indicates that Utahns will demand roughly 47 million prescriptions by 2025 – up from 30.9 million in 2013.^{32xxiv}

The efficiency by which pharmacists fill and distribute prescription drugs in the retail setting may change over the next decade. The time devoted to filling and distributing drugs may also change if retail pharmacists take on more counseling responsibilities. The UMEC estimates that retail pharmacists will be slightly more productive in filling prescriptions over the next decade than they were in 2013. Specifically, retail pharmacists in Utah have hovered between 15-17 prescriptions per hour from 2005-2013. Accordingly, the UMEC estimates that retail pharmacists in Utah will be able to fill an average of 16 prescriptions per hour for the foreseeable future.³³

Given these numbers, it is estimated that Utah will need 1,372 retail FTEs in 2025 to accommodate retail prescription demand. The UMEC estimates that the current pharmacist workforce in Utah contains 952 retail FTEs. Therefore, the Utah pharmacist workforce will need an additional 420 retail FTEs by 2025 to meet the retail prescription demand in the state.

10.2: RETIREMENT AND ATTRITION

10.2.a: UMEC Data

The average age Utah pharmacists plan on retiring is **65.5** years old – up from an average of 63.8 years old in 2005. For males, the average age they plan to retire is 66.2 years old, with the average for females at 64.4 years old. One-quarter (**25.80%**) of the current Utah pharmacist workforce is anticipating on retiring within the next decade. This translates into roughly **390** FTE pharmacists retiring over the next decade. In addition, UMEC data estimates that **85** additional FTEs will leave the workforce as a result of attrition (i.e. leaving before the age of 65 and for reasons other than retirement). Utah's pharmacists workforce is estimated to lose approximately **475** FTEs over the next decade due to retirement and attrition. See Appendix A (Table 9) for a comparison between anticipated timeframes for retirement from the 2013 and 2005 Utah pharmacist workforce.

³¹ Retail prescriptions filled per capita by age in Utah in 2007 is estimated as follows: ages 0-18 (3 per capita), ages 19-64 (11 per capita), and ages 65 plus (25 per capita). In 2013, the retail prescriptions increased slightly across the age groups to 3.2 (0-18 years old), 12.4 (19-64 years old), and 25.2 (over 65 years of age).

³² Annual average increases for population age cohorts are as follows: (1.2%) 0-18 years old, (1.9%) 19-64 years old, and (6.0%) for ages 65 and over. In addition, prescriptions filled per capita are estimated to increase across the following age cohorts to 3.5 (0-18 years old), 14.8 (16-64 years old), and 25.5 (65 years old and over). Total retail prescriptions demand by 2025 are estimated to be 47,141,177.

³³ The UMEC estimates of 16 prescriptions per hour are slightly higher than what the current average is. The number also incorporates improvements in efficiency over time which are likely to occur.

10.2.b: Utah Division of Occupational and Professional Licensing Data

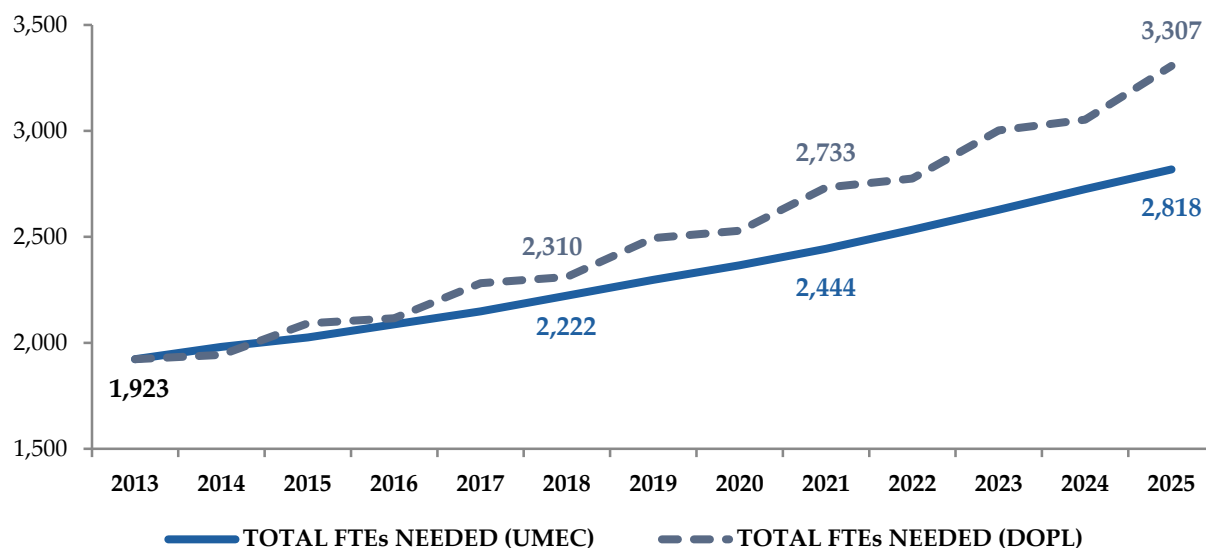
Over the last decade (2003-2013), 888 pharmacists have allowed their license to expire in Utah. Over this same time period, expired licenses for individuals over the age of 65 increased at an annual average of 7.5%, while expired licenses for individuals under the age of 65 has increased at an annual average of 16.1%.

Several steps are taken to estimate the FTE impact of these expired licenses on Utah's pharmacist workforce. To begin, the annual average increase from the last decade has been applied to both attrition and retirement groups for the coming decade. Second, the total number of licenses is adjusted to indicate the estimated number of pharmacists who practice in Utah (70% of all licenses). Third, licenses in attrition and retirement cohorts are each adjusted to mimic the average FTE for that cohort within the current workforce. Specifically, the average FTE over 65 is .69, while the average FTE for an individual under the age of 65 is .96. These calculations estimate that the pharmacist workforce will need to replace 964 FTEs over the next decade as a result of retirement and attrition.

10.2.c: Total Demand for Utah Pharmacist Workforce

The total demand for Utah's pharmacist workforce in 2025 is comprised of 1) retail demand, 2) non-retail demand, and 3) retirement and attrition rates. UMEC calculations estimate that prescription volume in 2025 will require an additional 420 retail FTEs at the current fill rate of 16 prescriptions per hour. Over the last decade, retail FTEs have remained **50%** of the total FTEs in Utah. Accordingly, UMEC estimates that the retail workforce will remain roughly 50% of the total FTEs within the workforce for the foreseeable future. Lastly, UMEC data also estimates that roughly 475 FTEs will be leaving the workforce within the next decade.

FIGURE 21: TOTAL WORKFORCE FTEs DEMANDED



SECTION 11: UTAH'S FUTURE PHARMACIST WORKFORCE – FUTURE SUPPLY

The future supply of Utah's pharmacist workforce can be estimated by looking at graduation trends from in-state pharmacy programs and the issuance of new licenses. In-state pharmacy programs currently provide a predictable supply of pharmacists to Utah. Specifically, the make-up of current pharmacy programs in Utah provide both a predictable number of graduates each year alongside a predictable retention rate of those graduates. The yearly inflows of graduates from both the University of Utah College of Pharmacy and Roseman University of Health Sciences College of Pharmacy have contributed to the continually growing number of new annual licenses in Utah.

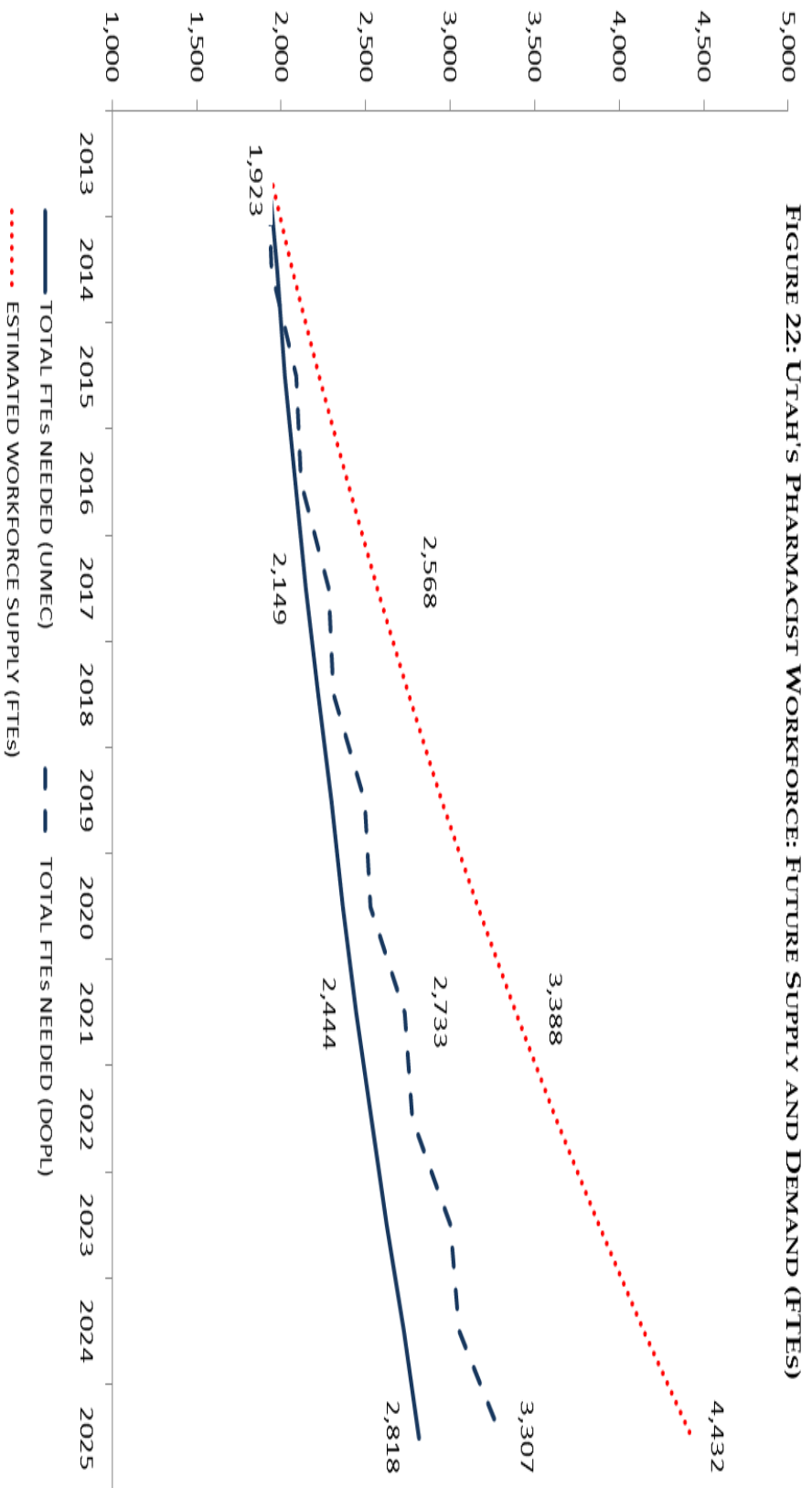
Over the last decade (2004-2013), DOPL issued an average of **119** new pharmacist licenses per year. The annual average growth in new DOPL licenses over the last decade is **10.5%** per year. A steady growth around 10.5% is expected into the future if both pharmacy programs continue to graduate students who are more inclined to work in Utah. Specifically, the make-up of both pharmacy programs currently contains a majority of Utah residents – leading to yearly retention rates of roughly 70 percent per graduating class.³⁴ Accordingly, the annual increase in new DOPL licenses is likely to remain relatively stable if both pharmacy programs continue to graduate classes who are more inclined to practicing in Utah.

11.1: MATCHING PROJECTED DEMAND WITH PROJECTED SUPPLY

A decade ago the Utah pharmacist workforce was in a palpable shortage. By 2013, the workforce has stabilized and has been successfully meeting the new role changes in both the retail and non-retail settings. Moving forward, the current supply of pharmacists is estimated to be above the estimated demand for pharmacists by 2025.

Many factors may change over the coming decade that can influence the current demand and supply trajectory. Regarding demand, the productivity and utilization of pharmacists in certain settings is likely to change in the coming years. For instance, productivity gains/losses as a result of increased utilization of pharmacy technicians, increased automation, improved dispensing technology, increased vaccinations, increased need to counsel, and an overall expanding scope can all influence the demand for pharmacist services within the state. Regarding supply, changing the complexion of entering classes may allow for schools to maintain class sizes while simultaneously 1) reducing the retention rate, and 2) reducing the gross number of graduates who practice in Utah upon graduation.

³⁴ In 2005, 70.9% of active Utah Pharmacists obtained their pharmacy education in Utah. By 2013, 1,987 (**93.1%**) of active pharmacists in Utah indicate that they received their education from Utah institutions.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
TOTAL FTEs NEEDED (UMEC)	---	1,981	2,025	2,087	2,149	2,222	2,297	2,366	2,444	2,533	2,628	2,725	2,818
TOTAL FTEs NEEDED (DOPL)	---	1,943	2,092	2,116	2,281	2,310	2,494	2,529	2,733	2,775	3,002	3,053	3,307
WORKFORCE SUPPLY (FTEs)	1,923	2,070	2,226	2,392	2,568	2,755	2,954	3,165	3,388	3,626	3,879	4,147	4,432

APPENDIX A: ADDITIONAL TABLES

Table 1			
Utah, Western, and National Pharmacist Comparison, 2013			
Western Region (BLS)	Pharmacists Employed	Population*	Pharmacist-per-100,000 ratio
<i>Arizona</i>	5,630	6,626,624	85.0
<i>California</i>	26,810	38,332,521	69.9
<i>Colorado</i>	4,350	5,268,367	82.6
<i>Idaho</i>	1,330	1,612,136	82.5
<i>Montana</i>	1,210	1,015,165	119.2
<i>Nevada</i>	2,100	2,790,136	75.3
<i>New Mexico</i>	1,550	2,085,287	74.3
<i>Oregon</i>	3,420	3,930,065	87.0
<i>Washington</i>	5,650	6,971,406	81.0
<i>Wyoming</i>	510	582,658	87.5
WESTERN REGION	52,560	69,214,365	75.9
NATIONAL	287,420	316,128,839	90.9
Utah (BLS,2013)	2,340	2,900,872	80.7
Utah (UMEC,2013)	2,135	2,900,872	73.6
Source: U.S. Department of Labor, Bureau of Labor Statistics, "Occupational Employment and Wages, May 2013: Pharmacists," Occupational Employment Statistics, 2013. Available at: http://www.bls.gov/oes/current/oes291051.htm#ind * U.S. Department of Commerce, United States Census Bureau, "State and County QuickFacts, 2013." Available at: http://quickfacts.census.gov/qfd/index.html			

Table 2				
Geographic Distribution of Active Utah Pharmacists: 2013 vs. 2005				
County	Total Pharmacists (2005)	Workforce Percentage (2005)	Total Pharmacists (2013)	Workforce Percentage (2013)
<i>Beaver</i>	---	---	<5	.1%
<i>Box Elder</i>	21	1.30%	22	1.1%
<i>Cache</i>	58	3.60%	72	3.6%
<i>Carbon</i>	18	1.10%	14	.7%
<i>Daggett</i>	---	---	---	---
<i>Davis</i>	152	9.50%	159	8.0%
<i>Duchesne</i>	13	0.80%	22	1.1%
<i>Emery</i>	<5	0.25%	<5	.1%
<i>Garfield</i>	8	0.50%	<5	.3%
<i>Grand</i>	---	---	6	.3%
<i>Iron</i>	32	2.00%	29	1.5%
<i>Juab</i>	---	---	10	.5%
<i>Kane</i>	---	---	<5	.3%
<i>Millard</i>	---	---	9	.5%
<i>Morgan</i>	8	<1.0%	<5	.2%
<i>Piute</i>	---	---	---	---
<i>Rich</i>	---	---	6	.3%
<i>Salt Lake</i>	813	50.70%	1,012	50.7%
<i>San Juan</i>	---	---	13	.7%
<i>Sanpete</i>	13	0.80%	25	1.3%
<i>Sevier</i>	8	0.50%	13	.7%
<i>Summit</i>	17	1.10%	24	1.2%
<i>Tooele</i>	9	0.60%	23	1.2%
<i>Uintah</i>	12	0.75%	14	.7%
<i>Utah</i>	202	12.60%	228	11.4%
<i>Wasatch</i>	---	---	19	1.0%
<i>Washington</i>	79	4.90%	110	5.5%
<i>Wayne</i>	---	---	---	---
<i>Weber</i>	135	8.40%	150	7.5%
Total	1,626*		2,135*	
--- = Non-reportable information				
* Totals in table don't add up to totals due to item non-response on work location questions.				

Table 3**Geographic Distribution of Utah Pharmacists across BLS Economic Regions: UMEC vs. BLS**

Utah Economic Region (BLS)	Pharmacists Employed (UMEC, 2013)	Workforce Proportion	Pharmacists Employed (BLS, 2013)	Workforce Proportion
<i>Salt Lake City</i>	1,014	56.46%	1,250	54.11%
<i>Ogden-Clearfield</i>	282	15.70%	360	15.58%
<i>Provo-Orem</i>	199	11.08%	380	16.45%
<i>St. George</i>	110	6.12%	140	6.06%
<i>Bear River</i>	73	4.06%	60	2.60%
<i>West Central (Non-Metropolitan)</i>	46	2.56%	---	---
<i>North (Non-Metropolitan)</i>	28	1.56%	---	---
<i>Eastern (Non-Metropolitan)</i>	27	1.50%	70	3.03%
<i>South Western (Non-Metropolitan)</i>	17	.95%	50	2.16%
TOTAL	2,135*	100%	2,340*	100%

Source: U.S. Department of Labor, Bureau of Labor Statistics, "Occupational Employment and Wages, May 2013: Pharmacists," Occupational Employment Statistics, 2013. Available at: http://www.bls.gov/oes/current/oes_ut.htm

Countries in Regions: Eastern Non-Metropolitan (Daggett, Wasatch, Duchesne, Uintah, Carbon, Emery, Grand, San Juan); Ogden-Clearfield (Weber, Davis, Morgan); Salt Lake City (Tooele, Salt Lake, Summit); Provo-Orem (Juab, Utah); South Western Non-Metropolitan (Iron, Kane, Garfield, Beaver); St. George (Washington); Bear River (Cache).

--- = Non-reportable information

* Totals in table don't add up to totals due to item non-response on work location questions.

Table 4**Utah's Pharmacists Workforce by Work Setting: Total and Gender Comparison**

Work Setting*	Male Pharmacists (2013)**	Female Pharmacists (2013)**
<i>Retail – Chain</i>	471 (37.9%)	259 (32.8%)
<i>Retail – Independent</i>	227 (18.3%)	99 (12.5%)
<i>Hospital - Inpatient</i>	293 (23.6%)	225 (28.5%)
<i>Outpatient Clinic</i>	68 (5.5%)	56 (7.1%)
<i>Hospital – Outpatient</i>	49 (3.9%)	56 (7.1%)
<i>Long Term Care Center</i>	48 (3.9%)	15 (2.0%)
<i>College of Pharmacy</i>	12 (1.0%)	14 (2.0%)
<i>Managed Care Facility</i>	12 (1.0%)	14 (2.0%)
<i>Mail Order Pharmacy</i>	7 (<1.0%)	<5 (<1.0%)
<i>Other</i>	55 (4.4%)	48 (6.1%)
TOTAL	1,331*	804*

* Percentage displayed represents the workforce percentage found in each setting. The percentages are not taken out of 2,135 due to missing responses and multiple work settings.

** Percentage displayed reflects the proportion of each gender found in each work setting.

Table 5**Total FTEs Produced by Work Setting**

Work Setting	Total FTEs (2013)
<i>Retail – ALL</i>	951.72
<i>Hospital - Inpatient</i>	509.84
<i>Hospital – Outpatient</i>	111.63
<i>Outpatient Clinic</i>	109.03
<i>Long Term Care Center</i>	68.25
<i>College of Pharmacy</i>	31.69
<i>Managed Care Facility</i>	24.06
<i>Mail Order Pharmacy</i>	10.45
<i>Other</i>	106.09
TOTAL	1,922.75

Table 6 Utah, Western, and National Pharmacist Wage Comparison, 2013		
Western Region (BLS)	Mean Hourly Wage (BLS, 2013)	Mean Annual Wage (BLS, 2013)
<i>Arizona</i>	\$58.18	\$121,020
<i>California</i>	\$62.29	\$129,560
<i>Colorado</i>	\$55.45	\$115,330
<i>Idaho</i>	\$53.10	\$110,440
<i>Montana</i>	\$50.52	\$105,080
<i>Nevada</i>	\$56.09	\$116,660
<i>New Mexico</i>	\$57.05	\$118,670
<i>Oregon</i>	\$57.27	\$119,120
<i>Washington</i>	\$56.37	\$117,240
<i>Wyoming</i>	\$54.38	\$113,120
NATIONAL	\$56.01	\$116,500
Utah (BLS,2013)	\$54.30	\$112,940
Utah (UMEC,2013)		~118,658
<p>Source: U.S. Department of Labor, Bureau of Labor Statistics, "Occupational Employment and Wages, May 2013: Pharmacists," Occupational Employment Statistics, 2013. Available at: http://www.bls.gov/oes/current/oes291051.htm#ind</p> <p>Note: BLS and UMEC use a 2,080 hour work year for the year round, full time pharmacists shown here.</p> <p>* UMEC's 2013 Hourly and Annual Wage is mean wage calculated from categorical data.</p>		

Table 7 Percentage Time Spent in Various Activities (5%) by STAFF Pharmacists across Work Settings									
Work Activity	Retail Chain	Retail Independent	Hospital Inpatient	Hospital Outpatient	Outpatient Clinic	Long Term Care Center	Managed Care Center	College of Pharmacy	Mail Order Pharmacy
<i>Dispensing</i>	60.6%	58.3%	49.4%	44.4%	53.3%	59.8%	26.7%	8.0%	61.3%
<i>Patient Counseling</i>	23.9%	20.9%	12.8%	25.7%	24.2%	14.2%	48.3%	22.8%	30.0%
<i>Administrative</i>	11.6%	15.0%	11.2%	10.5%	12.7%	9.2%	10.0%	10.0%	0.0%
<i>Consulting</i>	9.2%	12.7%	20.1%	7.2%	31.8%	20.7%	0.0%	35.0%	0.0%
<i>Patient Specific Care</i>	7.9%	10.3%	36.5%	33.2%	42.6%	12.9%	15.0%	40.7%	20.0%
<i>Teaching/Precepting</i>	6.3%	9.4%	13.6%	14.6%	12.0%	11.3%	5.0%	33.5%	5.0%
<i>Research</i>	5.9%	6.6%	11.9%	15.7%	8.4%	6.7%	20.0%	20.7%	5.0%
<i>Procuring Medications</i>	6.5%	6.6%	8.8%	7.6%	13.1%	8.8%	10.0%	0.0%	0.0%
<i>Other</i>	15.0%	10.0%	21.0%	14.0%	26.7%	11.7%	45.0%	0.0%	15.0%

Table 8
Utah Pharmacists in Multi-Disciplinary Teams by
Team Member and by Retail and Hospital Inpatient
Settings.

Team Member	Retail	Hospital Inpatient
<i>MD/DO</i>	76.6%	30.2%
<i>LPN/RN</i>	73.4%	26.4%
<i>NP</i>	54.7%	22.8%
<i>Dietician</i>	49.5%	19.5%
<i>Other Pharmacists</i>	52.3%	19.0%
<i>Social Workers</i>	51.0%	17.4%
<i>PA</i>	47.1%	19.5%
<i>Health Educators</i>	23.2%	9.8%
<i>CRNA</i>	15.1%	6.0%
<i>RT/PT/OT</i>	13.8%	4.3%
<i>CNM</i>	9.4%	1.6%
<i>Dentist</i>	4.2%	1.6%
<i>Other</i>	0.8%	0.7%

Note: The percentages here represent only the pharmacists who indicated that they work in a multidisciplinary care team. Accordingly, the percentages here are not for the entire pharmacist workforce, but only of those who indicate that they work in such care teams.

Table 9
Years to Retirement for Utah Pharmacists:
2013 vs. 2005

Age Cohort	2005	2013
<i>< 1 year</i>	3.50%	1.10%
<i>1-5 years</i>	10.80%	12.00%
<i>6-10 years</i>	12.30%	12.70%
<i>11-15 years</i>	14.50%	11.10%
<i>16-20 years</i>	17.00%	12.30%
<i>21-25 years</i>	11.20%	14.50%
<i>26-30 years</i>	12.20%	14.50%
<i>31-35 years</i>	9.90%	12.60%
<i>36-40 years</i>	4.10%	7.10%
<i>> 40 years</i>	2.30%	2.10%

FIGURE 1: PHARMACIST-TO-100,000 POPULATION RATIO: UTAH VS. WEST VS. U.S.A.

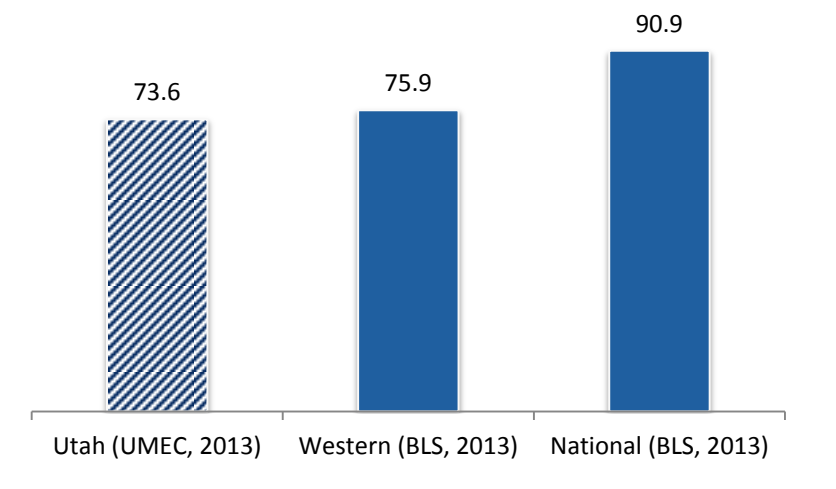
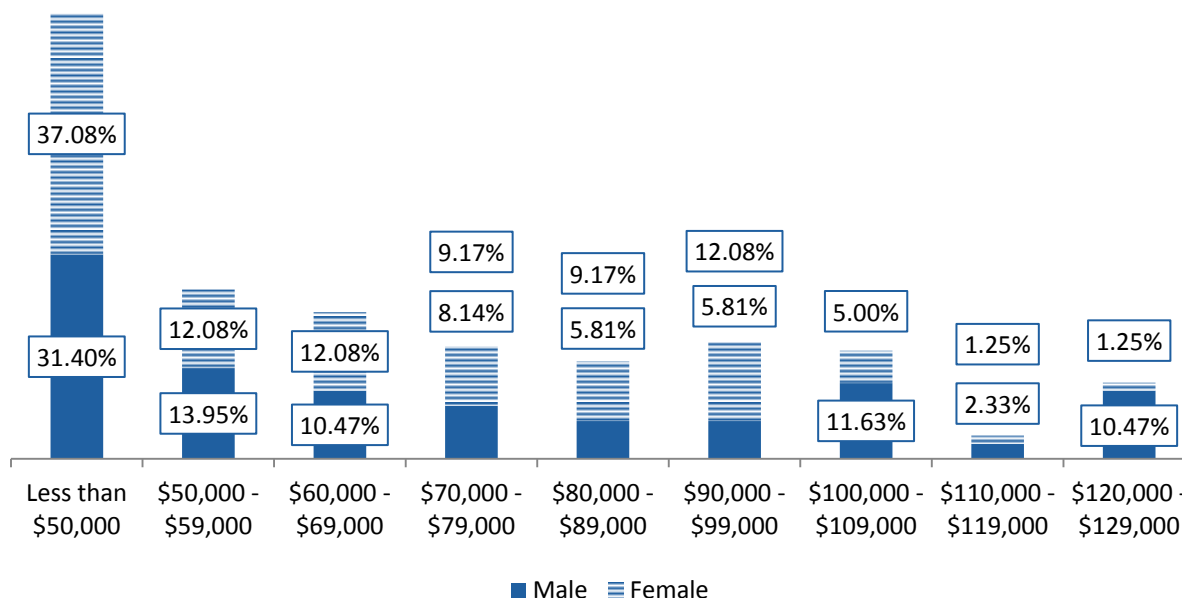


FIGURE 2: WAGE BY GENDER: PART-TIME STAFF PHARMACISTS



* Categories not represented here contain <1%

** Part-time staff employees here may be working two part-time jobs.

APPENDIX B: SURVEY INSTRUMENT



Council Members

Chair

Wayne M. Samuelson, M.D.

Members

John A. Bernsike, M.D.

Gar T. Ellison, M.S.

Larry G. Reimer, M.D.

Douglas L. Smith, M.D.

Larry V. Staker, M.D.

Sue F. Wilkey, DNP

Mary Williams, PhD, RN

Utah Medical Education
Council
230 South 500 East, Ste. 210
Salt Lake City, UT 84102
Phone: (801) 526-4550
Fax: (801) 526-4551
www.utahmec.org
129271

Dear Pharmacist,

This survey is being conducted by the Utah Medical Education Council in cooperation with the Utah Pharmacist Association, the University of Utah College of Pharmacy, Idaho State University College of Pharmacy, Roseman University College of Pharmacy, Intermountain Health Care, the Utah Board of Pharmacy, Walgreens, Smith's Food and Drug, and the Utah Division of Occupational and Professional Licensing.

Your response to this survey is crucial in determining the active pharmacist workforce characteristics and distribution in Utah. The data requested will be kept strictly confidential. Aggregate data will be presented in a final report that can be accessed for free at <http://www.utahmec.org>

For any further questions, please contact Utah Medical Education Council at 801-526-4550 or jaronhalford@utah.gov. Please return the completed survey in the envelope provided.

Sincerely,

Richard Campbell
Executive Director
Utah Medical Education Council

Evan J. Vickers, R.Ph
Pharmacist
Utah State Senator

Adam Jones
Executive Director
Utah Pharmacists Association

Chris Ireland, Ph.D.
Dean, College of Pharmacy
University of Utah

Larry Fannin, Pharm.D
Dean, College of Pharmacy
Roseman University of Health Sciences

Pharmacists Workforce Advisory Committee

Reid Barker, B.S.

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Pharm

Chris Ireland, Ph.D.

Robert McIntyre

Jaime Peterson

Mark Steinagel, MPA

Blair Woolf

Evan Vickers, R. Ph

David Young, PharmD

1. Are you providing pharmacy related services in Utah? ☐ YES ☐ NO

a) If **NO**, please specify why you maintain a Utah license: _____

b) If **NO**, on a scale of 1-5 (1 being the most influential and 5 being the least influential), please rank the individual factors that have influenced your choice to work outside of Utah:

Family _____	Wage/Payscale _____	Climate _____
Lifestyle _____	Work Environment _____	Other (specify) _____

IF YOU PROVIDE NO PROFESSIONAL SERVICES IN UTAH PLEASE STOP AND RETURN THIS SURVEY.

SECTION 1: BACKGROUND AND GENERAL INFORMATION

2. (a) What is your gender? ☐ Male ☐ Female (a) Age: _____ years

3. (a) Where did you spend the majority of your upbringing?

City/Town: _____ County: _____ State: _____ Zip Code: _____

(b) Estimated population of the city/town at the time of your upbringing:

<input type="checkbox"/> 0-2,500	<input type="checkbox"/> 10,000 to 49,999	<input type="checkbox"/> 150,000 to 249,999
<input type="checkbox"/> 2,500 to 9,999	<input type="checkbox"/> 50,000 to 149,999	<input type="checkbox"/> 250,000

4. (a) Are you of Hispanic ethnicity? ☐ YES ☐ NO

(b) What is your race? ☐ African American ☐ Asian
☐ Caucasian ☐ American Indian ☐ Pacific Islander ☐ Other (please specify) _____

SECTION 2: YOUR EDUCATION

5. (a) Please provide information about your pharmacy degree and the degree-granting institution:

Degree Conferred: ☐ PharmD ☐ B.S. Pharm

State: _____ Year of Degree: _____ Check one that applies:

☐ State School

(b) What was your total educational debt for pharmacy school at the time of graduation? \$ _____

6. (a) If you received a post-pharmacy degree, please provide the following information regarding the post-pharmacy degree:

Degree Conferred: ☐ Ph.D ☐ Masters (☐ MS, ☐ MBA, ☐ MA, ☐ MPH, ☐ Other _____)

Year of Degree: _____ Institution: _____

(b) What was your total educational debt for your post-graduate degree at the time of graduation? \$ _____

7. Please provide the following information regarding your residency opportunities:

a) I am not interested in a residency ☐ YES**PGY1 Residency****PGY2 Residency**

b) I have completed a residency

☐ YES ☐ NO☐ YES ☐ NO

c) I am currently enrolled in a residency

☐ YES ☐ NO☐ YES ☐ NO

d) I am seeking enrollment in a residency

☐ YES ☐ NO☐ YES ☐ NO**SECTION 3: YOUR WORK**

PLEASE USE THE FOLLOWING DEFINITIONS WHERE APPLICABLE

Full-time: 36-40 Hours per week OR 72-80 Hours per two-week period.**Part-time:** 1-36 hours per week OR 1-72 hours per two-week.**As needed:** As Needed Basis (*Per Diem*).**Primary Place of Employment:** The location you spend the most number of hours per week.

8. (a) What is your primary work status? (please check one of the following)

☐ Active Full Time Pharmacist☐ Retired☐ Active Part Time Pharmacist☐ Other (specify) _____

(b) What is the average number of hours you work per week? _____ hrs/wk

9. Please indicate your current practice setting(s) and the hours per week worked at each applicable work setting.

Practice Setting	Zip Code	Hrs/Week	Practice Setting	Zip Code	Hrs/Week
Retail Pharmacy – Chain	_____	_____	Long Term Care Center	_____	_____
Retail Pharmacy – Independent	_____	_____	College of Pharmacy	_____	_____
Hospital Based – Inpatient	_____	_____	Mail Order Pharmacy	_____	_____
Hospital Based – Outpatient	_____	_____	Managed Care Facility	_____	_____
Outpatient Clinic	_____	_____	Other (specify) _____	_____	_____

10. Please indicate 1) the percentage of time you spend in a typical week on the following activities; and
-
- 2) if applicable, the average number of prescriptions filled OR doses dispensed during the same week:

	Time (% per week)	Rx/Dose Dispensed (# per week)	Check one that applies
a) ADMINISTRATION/SUPERVISING: (Planning, budgeting, personnel management, insurance issues)	_____	_____	<input type="checkbox"/> Rx/wk <input type="checkbox"/> Doses Dispensed/wk
b) CONSULTING: (Nursing homes, home health care, pharmaceutical companies, etc)	_____	_____	
c) DISPENSING/ DRUG DISTRIBUTION: (Order entry and clarification, drug distribution)	_____	_____	<input type="checkbox"/> Rx/wk <input type="checkbox"/> Doses Dispensed/wk
d) PATIENT COUNSELING: (Medication counseling without teaching of students/residents)	_____	_____	<input type="checkbox"/> Rx/wk <input type="checkbox"/> Doses Dispensed/wk
e) PROCURING MEDICATIONS/ RETAILING: (Ordering/Receiving drugs from wholesale/pharmaceutical industry)	_____	_____	
f) PROVIDING DISEASE OR PATIENT SPECIFIC CARE: (Multidisciplinary care teams; patient monitoring)	_____	_____	<input type="checkbox"/> Interventions/wk
g) RESEARCH/SEEKING DRUG INFORMATION:	_____	_____	
h) TEACHING/PRECEPTING:	_____	_____	
i) OTHER (specify) _____	_____	_____	

PLEASE ANSWER QUESTIONS 11, 12 AND 13 ONLY IF YOU WORK IN RETAIL, NON-INSTITUTIONAL SETTING(S). PLEASE SKIP TO QUESTION 14 IF YOU WORK IN AN INSTITUTIONAL/HEALTH SYSTEM SETTING(S)

11. What is the average number of prescriptions you fill per hour? _____ Rx/hr
12. Over the last five years have the average number of prescriptions you fill each day:
- | | | | | | |
|--|-------------------------------|--------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| <input type="checkbox"/> Increased | <input type="checkbox"/> 0-5% | <input type="checkbox"/> 6-10% | <input type="checkbox"/> 11-15% | <input type="checkbox"/> 16-20% | <input type="checkbox"/> Over 21% |
| <input type="checkbox"/> Decreased | <input type="checkbox"/> 0-5% | <input type="checkbox"/> 6-10% | <input type="checkbox"/> 11-15% | <input type="checkbox"/> 16-20% | <input type="checkbox"/> Over 21% |
| <input type="checkbox"/> Remained the Same | | | | | |
13. Over the last five years, have the percentage of time you spend dealing with insurance issues:
- | | | | | | |
|--|-------------------------------|--------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| <input type="checkbox"/> Increased | <input type="checkbox"/> 0-5% | <input type="checkbox"/> 6-10% | <input type="checkbox"/> 11-15% | <input type="checkbox"/> 16-20% | <input type="checkbox"/> Over 21% |
| <input type="checkbox"/> Decreased | <input type="checkbox"/> 0-5% | <input type="checkbox"/> 6-10% | <input type="checkbox"/> 11-15% | <input type="checkbox"/> 16-20% | <input type="checkbox"/> Over 21% |
| <input type="checkbox"/> Remained the Same | | | | | |

14. At your primary place of employment, what best describes your current position? (Please CHECK ALL THAT APPLY)
- ☐ Owner/Partner/Executive Officer
- ☐ Management (e.g. director, manager, assistant manager, supervisor)
- ☐ Staff (e.g. clinical pharmacist, consultant, staff pharmacist, relief pharmacist)
- ☐ Other (specify) _____

PLEASE ANSWER QUESTIONS 15, 16 AND 17 IF YOU WORK AS AN OWNER/PARTNER/EXECUTIVE OFFICER/MANAGERIAL POSITION. PLEASE SKIP TO QUESTION 18 IF YOU DO NOT WORK IN THIS CAPACITY.

15. Please indicate the average time to fill an open or budgeted pharmacist position at your location.
- | | | |
|--------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> 0- 3 Months | <input type="checkbox"/> 6- 9 Months | <input type="checkbox"/> More than one year |
| <input type="checkbox"/> 3- 6 Months | <input type="checkbox"/> 9- 12 Months | |
16. In your place of employment, have any of the following taken place during the past year?
- | | |
|--|--|
| (a) Pharmacist layoff(s) | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| (b) Mandatory reduction(s) in pharmacist hours | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| (c) Early retirement incentive(s) for pharmacists | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| (d) Restructuring of pharmacist work schedule(s) to save labor costs | <input type="checkbox"/> YES <input type="checkbox"/> NO |
17. The annual number of prescriptions has been increasing significantly over the last 10 years. Please rank the top three steps that you have, or are planning on, implementing to meet the growing demand for prescriptions.
- | | <u>RANK</u> | | <u>RANK</u> |
|--|-------------|---|-------------|
| (a) Increase pharmacist workload/hours | _____ | (e) Increase pharmacy technician workload/hours | _____ |
| (b) Recruit additional pharmacists | _____ | (f) Recruit additional pharmacy technicians | _____ |
| (c) Increase prepackaging | _____ | (g) Other (specify) _____ | _____ |
| (d) Increase automation | _____ | | |

18. In your primary place of employment, what is the total number of:
- Full-time pharmacists currently employed? _____
- Part-time pharmacists currently employed? _____
- As-needed pharmacists currently employed? _____

19. In your primary place of employment, what is the number of vacant:
- Full-time pharmacist positions? _____
- Part-time pharmacist positions? _____
- As-needed pharmacist positions? _____

20. In your primary place of employment, do you supervise pharmacy technicians? ☐ YES ☐ NO
- If YES, (a) How many pharmacy technicians do you supervise per shift? _____
- (b) How many pharmacy technicians do you currently feel comfortable supervising per shift? _____

21. Do you work in a multidisciplinary care team? ☐ YES ☐ NO
- If YES, which health care professionals do you work with? (Check all that apply)
- | | | | |
|---------------------------------|-------------------------------|---|--|
| <input type="checkbox"/> MD/DO | <input type="checkbox"/> CRNA | <input type="checkbox"/> Dentist | <input type="checkbox"/> Dietician |
| <input type="checkbox"/> LPN/RN | <input type="checkbox"/> CNM | <input type="checkbox"/> Health Educators | <input type="checkbox"/> RT/PT/OT |
| <input type="checkbox"/> PA | <input type="checkbox"/> NP | <input type="checkbox"/> Social Workers | <input type="checkbox"/> Other (specify) _____ |

22. Do you currently precept pharmacy students? ☐ YES ☐ NO

If YES, what areas do you generally precept in?

☐ Introductory pharmacy practices (IPPE)
☐ Both

☐ Advanced pharmacy practices (APPE)

23. What is your average gross compensation? (before taxes AND excluding benefits)

<input type="checkbox"/> Less than \$50,000	<input type="checkbox"/> \$90,000-\$99,999	<input type="checkbox"/> \$140,000-\$149,999	<input type="checkbox"/> \$180,000-\$189,999
<input type="checkbox"/> \$50,000-\$59,999	<input type="checkbox"/> \$100,000-\$109,999	<input type="checkbox"/> \$150,000-\$159,999	<input type="checkbox"/> \$190,000-\$199,999
<input type="checkbox"/> \$60,000-\$69,999	<input type="checkbox"/> \$110,000-\$119,999	<input type="checkbox"/> \$160,000-\$169,999	<input type="checkbox"/> \$200,000-\$209,999
<input type="checkbox"/> \$70,000-\$79,999	<input type="checkbox"/> \$120,000-\$129,999	<input type="checkbox"/> \$170,000-\$179,999	<input type="checkbox"/> Over \$210,000
<input type="checkbox"/> \$80,000-\$89,999	<input type="checkbox"/> \$130,000-\$139,999		

24. Compared to five years ago, your gross income has:

☐ Increased by ____% ☐ Decreased by ____% ☐ Remained the same

25. What is the number of years you have been employed by your present employer? _____ yrs

26. At what age are you planning to retire completely from practicing pharmacy? _____ yrs old

27. Are you planning to reduce the number of hours you work before you retire? ☐ YES ☐ NO

If YES, how many hours per week will you work after this reduction in hours? _____ hrs/wk

28. (a) Within the past two years, have you experienced any of the following: (check all that apply)

<input type="checkbox"/> Voluntary unemployment	<input type="checkbox"/> Involuntary unemployment
<input type="checkbox"/> Switched employers/practices	<input type="checkbox"/> Worked two or more positions at the same time?
<input type="checkbox"/> Worked part-time or temporary positions, but would have preferred a full-time or permanent position	<input type="checkbox"/> Hours decreased involuntarily

(b) If you have switched employers/practices within the past two years, please indicate the work setting you left and the work setting you moved to:

Setting Left

☐ Retail Pharmacy- Chain
☐ Retail Pharmacy- Independent
☐ Hospital Based- Inpatient
☐ Hospital Based- Outpatient
☐ Non-Hospital - Outpatient Clinic
☐ Long Term Care Center
☐ College of Pharmacy
☐ Mail Order Pharmacy
☐ Managed Care Facility
☐ Other (Specify) _____

Setting Moved To

☐ Retail Pharmacy- Chain
☐ Retail Pharmacy- Independent
☐ Hospital Based- Inpatient
☐ Hospital Based- Outpatient
☐ Non-Hospital - Outpatient Clinic
☐ Long Term Care Center
☐ College of Pharmacy
☐ Mail Order Pharmacy
☐ Managed Care Facility
☐ Other (Specify) _____

(c) If you have changed work settings within the past two years, please check the reason(s) for this change of work setting. Select all that apply:

<input type="checkbox"/> Higher Pay	<input type="checkbox"/> Work Responsibilities	<input type="checkbox"/> More Challenging
<input type="checkbox"/> Professional Advancement	<input type="checkbox"/> Moved	<input type="checkbox"/> Desire for Change
<input type="checkbox"/> Preferred hours	<input type="checkbox"/> Better Work/Education Fit	<input type="checkbox"/> Personal/Family Reasons
<input type="checkbox"/> Laid Off	<input type="checkbox"/> Position Elimination	<input type="checkbox"/> Other _____

SECTION 4: YOUR OUTLOOK

29. Ideally, how many hours would you choose to work at your primary place of employment each week? _____ hrs/wk

30. In your primary place of employment, do you have sufficient time to counsel patients? ☐ YES ☐ NO

31. Compared to last year at this time, how has your workload changed?

☐ Increased by ____% ☐ Decreased by ____% ☐ Remained the same

32. Overall, and taking into account all positions you fill, how satisfied are you with your current employment or work situation?

☐ Very satisfied ☐ Somewhat satisfied ☐ Somewhat dissatisfied ☐ Very dissatisfied

Thank You for Your Time.

Please Return the Survey Using the Enclosed Prepaid Return Envelope

APPENDIX C: REFERENCES

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- ^{ix} Knapp, David. "Professionally Determined Need for Pharmacy Services in 2020." *American Journal of Pharmaceutical Education* 66 (2002): 421-29.
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- ^{xiii} Gershon, SK, JM Cultice, and KK Knapp. "How Many Pharmacists Are in Our Future? The Bureau of Health Professions Projects Supply to 2020." *Journal of the American Pharmacists Association* 40.6 (2000): 757-64.
- ^{xiv} Knapp, Katherine K., and James M. Cultice. "New Pharmacist Supply Projections: Lower Separation Rates and Increased Graduates Boost Supply Estimates." *Journal of the American Pharmacists Association* 47.4 (2007): 463-70.
- ^{xv} Utah Medical Education Council (2009). Utah's Pharmacist Workforce, 2005. Salt Lake City, UT. <http://www.utahmec.org/uploads/files/14/2009%20Pharmacist%20Report.pdf>.
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- ^{xvii} Johnson, T. J. "Pharmacist Work Force in 2020: Implications of Requiring Residency Training for Practice." *American Journal of Health-System Pharmacy* 65.2 (2008): 166-70.
- ^{xviii} Murphy, John E., Jean M. Nappi, and John A. Bosso. "American College of Clinical Pharmacy's Vision of the Future: Postgraduate Pharmacy Residency Training as a Prerequisite for Direct Patient Care Practice." *Pharmacotherapy* 26.5 (2006): 722-33.

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